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No. 42

## ICA Grants Vietnam \$1,100,000 Fertilizer Authorization; Korea Supply Specifications Changed

WASHINGTON—Fertilizer authorizations totaling \$1,100,000 for Vietnam and changes in specifications for fertilizer to Korea as part of the U.S. aid program have been announced by International Cooperation Administration.

The Vietnam authorizations are \$500,000 for nitrogenous fertilizer, \$300,000 for potash and \$300,000 for phosphates and mixed fertilizers. Contract period for all three authorizations ends Dec. 31, and terminal delivery date is next Feb. 28. The procurement source for all is world wide.

Changes in specifications for the supply of fertilizer to Korea were announced by the Office of Small Business of ICA.

The requirement for 130,000 metric tons ammonium sulfate (20-21% N), or equal, has been divided into five acceptable types. Listed by the authorities are (a) ammonium sulfate (20-21% N), 30,000 metric tons or more; (b) urea (42-46% N), 30,000 tons maximum; (c) ammonium nitrate (33-36% N), 30,000 tons maximum; (d) calcium ammonium nitrate (20-21% N), 30,000 tons maximum;

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imum, and (e) ammonium sulfate nitrate (26% N) 10,000 tons maximum.

The buyer is the office of supply of the government of the Republic of Korea which is located at Seoul. The material may be supplied on a world wide basis.

Specifications and conditions may be obtained from the Korean Embassy, 2322 Massachusetts Avenue, Washington.

The U.S. authorities also state that a further provision has been added to the terms and conditions. In respect of barter provision it is stated that in the case of tie bids, all other conditions being equal, awards will be made to bidders having barter agreements with the Commodity Credit Corp. Bidders having such agreements must state the fact in their bids.

The closing date for bids is Oct. 19.

### Shell Chemical Announces Increase In Endrin Supply

NEW YORK—Endrin supplies were substantially increased when additional manufacturing facilities were recently completed, F. W. Hatch, manager of the agricultural chemicals division of Shell Chemical Corp., announced Oct. 13.

Endrin, a stereoisomer of dieldrin, has been used for the control of cotton and tobacco insects since its introduction two years ago. It has also shown good results in controlling insects affecting sugar beets and cabbage seedlings, Mr. Hatch said. Manufacturing facilities are located at Shell Chemical's Denver plant.

### Umbaugh to Build New Fertilizer Plants in Colorado

MEMPHIS—Plans for construction of three fertilizer plants costing approximately \$10,000,000 at Walsenburg, Colo., were announced here last week by Raymond Umbaugh, president of Umbaugh Agricultural Chemical Co.

The plants, producing anhydrous ammonia, phosphoric acid and ammonium sulfate phosphate, will be built by Umbaugh Chemicals, Inc., a Colorado subsidiary of Umbaugh Agricultural Chemical Co., but will be operated by the parent company.

Mr. Umbaugh was unable to disclose production capacity but said in the industry they would be described as a medium sized operation.

Preliminary surveying work on the 168-acre tract already is underway, and ground breaking is expected to be in about two weeks. The site was subleased from Cotarco, Inc.

Mr. Umbaugh said the production of pelleted ammonium sulfate phosphate and phosphoric acid is expected to begin next March or April, while the manufacture of anhydrous is scheduled for January, 1957.

Two thirds of the production of anhydrous ammonia and phosphoric acid will be used for direct liquid soil application, with the remainder going into the production of ammonium sulfate phosphate.

The plants, to be of the most modern construction, will use coal

(Continued on page 8)

### National Average Corn Support Set at \$1.58 Bu.

WASHINGTON—The U.S. Department of Agriculture announced Oct. 11 that the national average support price for 1955 crop corn will be \$1.58 bu.

### Progress Noted in Development of Canadian Potash

425,000 Tons a Year Output Seen by 1958; U.S. Market Eyed

TORONTO—Reports indicate that considerable progress has been made in the work of developing the extensive potash resources of Saskatchewan. Two companies, one American and the other Canadian, have completed plans to mine the potash.

Potash Co. of America is mining at Patience Lake, about 14 miles east of Saskatoon, and Western Potash Co., Ltd., the Canadian firm, is operating at Unity, about 120 miles west of Saskatoon.

It is estimated by 1958 when full production has been reached the

(Continued on page 8)

### J. R. Simplot Co. Buys Nebraska Fertilizer Firm

POCATELLO, IDAHO—The purchase of the Platt Valley Fertilizer Co. plant at Scottsbluff, Neb. has been announced by the J. R. Simplot Co., an Idaho corporation.

W. Grant Kilbourne, vice president of Simplot and general manager of the fertilizer division, announced that the Scottsbluff operation of Curry Chemical Division of Phillips Petroleum Co. has been purchased by Simplot.

Policies and personnel of the company will remain intact. A Simplot manager, C. E. Brissenden, will take over the operation, however. The Platt Valley name and brand will be maintained.

## New Methods More Than Double Corn Yields in Minnesota Test

RED WING, MINN.—Raising corn by modern methods more than doubled yields and nearly tripled returns over methods used 30 years ago in a demonstration, "Corn—Yesterday and Today," on the Walter and Paul Wenzel farm near here this year.

Results of this demonstration of the value of agricultural research were reported Oct. 7 in a special field day held on the farm.

Corn on the "corn today" plot was raised under the most modern methods; corn on the adjoining "corn yesterday" plot under methods common 30 years ago, according to Arnold Wiebusch, Goodhue County soils agent, who was in charge of the demonstration.

Working with Mr. Wiebusch and the Wenzels were G. J. Kunau, Goodhue County agent; Harold Jones, University of Minnesota extension soils specialist, and Edwin Jensen, University of Minnesota extension agronomist.

"Corn today" showed its superiority to "corn yesterday" in many important respects including the following:

Higher yields, 123 bu. an acre compared to 59 bu. This difference is illustrated in the two accompanying photos. Paul Wenzel is on the left with the "corn yesterday" yield and Mr. Wiebusch on the right with the "corn today" yield.

Greater returns, \$90 per acre compared to \$35. Yields were so much higher that they offset the higher cost of production per acre which was \$39

(Continued on page 22)



## Plea Made for More Radio Frequencies For Mining Industry

LAS VEGAS, NEV.—The need for allocation of adequate industrial frequencies to the mining industry for radio communication was underlined here Oct. 12 by J. G. Ivy, general engineering section head for the engineering division of International Minerals & Chemical Corp., Chicago.

Speaking at a session on open-pit mining during the 1955 convention of the American Mining Congress, Mr. Ivy described a radio communications system used by International Minerals & Chemical Corp. in its phosphate mining operations in Florida and stressed its contribution to operations efficiency.

The radio system has been in use at the corporation's phosphate mines

in the vicinity of Bartow, Fla., since 1950 and has increased International's earnings by saving money and lowering production costs.

Thirty five mobile units are utilized, and several systems are operated on two radio frequencies. The first frequency ties together maintenance, mining, milling and staff departments. Four spot networks operated on a second frequency in the low power radio band serve the communication needs of small working teams in the field.

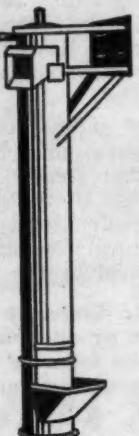
## Oklahoma Plant Food Group Schedules Meeting

STILLWATER, OKLA.—The Oklahoma Plant Food Educational Society, Inc., will meet at the Memorial Union Bldg. at Oklahoma A&M College here Nov. 29-30. Topics of interest to dealers will be stressed.

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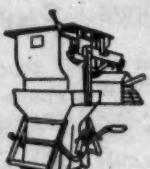


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## Nitrogen as a Regulator of Plant's Ability to Obtain Other Nutrients in the Soil

### EDITOR'S NOTE

The author of this article, Dr. E. O. McLean, is associate agronomist at the University of Arkansas Agricultural Experiment Station. Although a little on the technical side, the article shows how nitrogen application may affect the ability of plants to compete with each other and the soil for phosphate, potassium, calcium and magnesium. This is therefore of interest to people throughout the fertilizer industry. Material contained in this feature appeared in the fall issue of Arkansas Farm Research.

(except for vetch) lower cation exchange capacities of their roots than plants grown in solutions of medium nitrogen. Also, plants grown in high nitrogen systems contained more nitrogen and had higher exchange capacity values than those grown with medium nitrogen. The legumes—especially vetch—were somewhat erratic probably because they are able to obtain nitrogen from the air.

How much the added nitrogen increased the cation exchange capacity of the roots varied with the crop. In the case of oats, the cation exchange capacity was increased by 40% from the low to the high nitrogen level. For corn the increase was about 30%; and for the other crops, except vetch, it was roughly 10%. The results with the two plantings of buckwheat suggest that these increases would be still greater with older plants. However, this remains to be determined.

An increase in the cation exchange capacity of roots increases their competitive ability to obtain the divalent cations calcium and magnesium. It has already been mentioned that such an increase also aids in the release and uptake of extra phosphate. On the other hand, the increase in exchange capacity decreases the root's ability to take from the soil a monovalent cation such as potassium.

This decreased ability to absorb potassium might well be one reason why more potash fertilizer often is needed for maximum yields of crops when high rates of nitrogen have been applied (aside from the fact that the extra roots and tops produced would require more potassium.)

The cereals were affected more by the extra nitrogen than were the other crops tested. This may be significant in small grain-legume or grass-legume mixtures. The compatibility in such mixtures is affected by the crops chosen. Those more nearly alike in the cation exchange capacities of their roots are less competitive for potassium, and thus more compatible.

If the results reported on cereals can be used as an index for all grasses, it appears that applying nitrogen to a grass-legume mixture would make the crops even more compatible. Why? The cation exchange capacities of their roots would be made even more nearly alike and there would be less tendency for the grass to "hog" the potassium away from the legume.

Full significance of these results awaits further study, but it is evident that nitrogen may affect the ability of plants to compete for other essential elements.

### MORE KNOWLEDGE NEEDED

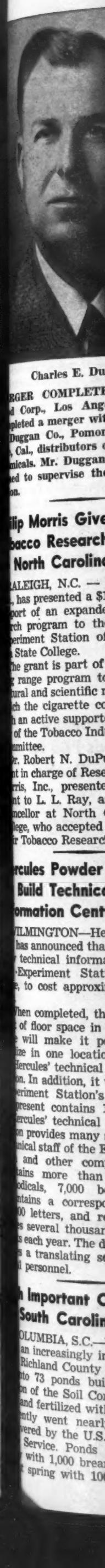
AMES, IOWA — On-the-farm knowledge of nitrogen materials and how they work in the soil hasn't kept pace with their use in Iowa, according to Joe Stritzel, Iowa State College extension agronomist.

### Measurements of Seedlings Grown in Gravel Cultures

Measurements and nitrogen level	Oats (15)	Corn (15)	Buckwheat (38)	Cotton (25)	Vetch (25)	Soybeans (25)
Cation exchange capacity*						
Low nitrogen**	17.7	21.6	41.6	46.8	44.7	52.4
Medium nitrogen**	21.0	24.0	42.4	49.6	45.9	48.2
High nitrogen**	24.4	27.4	44.0	51.8	50.0	50.3
% nitrogen in roots						
Low nitrogen	1.29	1.61	2.00	2.13	2.35	4.72
Medium nitrogen	1.51	1.75	2.05	2.50	2.65	4.69
High nitrogen	2.14	1.96	2.25	2.77	3.03	5.24
% nitrogen in tops						
Low nitrogen	3.50	3.16	1.98	1.79	4.84	6.57
Medium nitrogen	4.15	3.21	2.41	2.41	5.29	6.60
High nitrogen	5.08	3.84	3.00	3.32	6.40	7.33

\*Measured in milliequivalents per 100 grams of dry roots.

\*\*% normal, normal and twice normal nitrogen (nitrate) levels of 1/4 Hoagland solution.





Charles E. Duggan

**PLANT COMPLETED** — Plant Corp., Los Angeles, recently completed a merger with the Charles Duggan Co., Pomona and River, Cal., distributors of agricultural chemicals. Mr. Duggan has been re-appointed to supervise the Pomona Division.

#### Philip Morris Gives Tobacco Research Grant North Carolina State

RALEIGH, N.C. — Philip Morris, Inc., has presented a \$10,000 grant in support of an expanded tobacco research program to the Agricultural Experiment Station of North Carolina State College.

The grant is part of Philip Morris' long range program to expand agricultural and scientific research, under which the cigarette company also is an active supporter and a member of the Tobacco Industry Research Committee.

Mr. Robert N. DuPuis, Vice President in charge of Research for Philip Morris, Inc., presented the \$10,000 grant to L. L. Ray, assistant to the Chancellor at North Carolina State College, who accepted it on behalf of the Tobacco Research Fund.

#### Hercules Powder Co. Build Technical Information Center

WILMINGTON—Hercules Powder has announced that it will build a technical information center at the Experiment Station, Lancaster, to cost approximately \$1,000,000.

When completed, the 35,000 square feet of floor space in the new structure will make it possible to centralize in one location all facilities of Hercules' technical information division. In addition, it will include the Experiment Station's library which at present contains 10,000 volumes. Hercules' technical information division provides many services for the technical staff of the Experiment Station and other company units. It contains more than 500 scientific periodicals, 7,000 bound journals, maintains a correspondence file of 10,000 letters, and receives and inspects several thousand technical reports each year. The division also provides a translating service for technical personnel.

#### Important Crop South Carolina County

COLUMBIA, S.C.—Fish are becoming an increasingly important "crop" to Richland County farmers. About 73 ponds built under supervision of the Soil Conservation Service and fertilized with 8-8-4 fertilizer recently went nearly 95,000 bream covered by the U.S. Fish and Wildlife Service. Ponds will be stocked with 1,000 bream per acre, and in spring with 100 bass per acre.

#### Fertilizer Investment Survives Bad Crop Years, Says Missouri Agronomist

COLUMBIA, MO.—Fertilizer is one farm investment that can survive bad cropping weather one year and come back the next to build high yields and profits, according to George Smith of the University of Missouri soils department.

Mr. Smith points out that fertilizer's carry-over value was shown in this year's wheat crop on some Missouri farms. In some cases, up to 50 bu. wheat was harvested on land where corn was burned out by drought last year.

Even though last year's corn crop was a complete failure on some farms in 1954, he says, the fertilizer used on it will be paid for by the increase in wheat yields this year. Fertilizer is definitely not a one-year proposition. Its residual value can pay dividends for several years.

Mr. Smith reports that one of fertilizer's greatest potentials in Missouri is on grass. Good quality timothy, with high protein content, cut four times a year for hay can take from the soil as much as 150 lb. nitrogen, 60 lb. phosphate, and 110 lb. potash. That is about equal to the nutrient removal of a 100-bu. corn crop.

#### Six Companies Named To NPFI Membership

WASHINGTON — The executive committee of the National Plant Food Institute has unanimously elected six fertilizer companies to membership in the Institute. They are:

Freeport Sulphur Co., New York; National By-Products, Inc., Fertilizer Division, Des Moines; Potash Import & Chemical Corp., New York; J. R. Simplot Co., Fertilizer Division, Pocatello, Idaho; Synthetic Fertilizer & Chemicals, Inc., New York, and Woonsocket (R.I.) Color & Chemical Co.

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#### Spruce Control Spray Program Completed In Colorado Forests

DURANGO, COLO.—Gordon Gray, forest supervisor, has reported that spruce beetle control spray projects in San Juan forests are about completed.

He said 293,000 trees were treated in the control program, and that 61,337 badly infected trees were cut down and logged. About 693,000 gal. beetle-killing spray were used in the program.

#### North Carolina Sales

RALEIGH, N.C.—Fertilizer sales in North Carolina during August totaled 15,575 tons, compared with 20,377 tons in August last year, the state Department of Agriculture has reported. July sales this year were 12,417 tons, a gain from sales of 9,205 tons in July, 1954.



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## INSECT AND PLANT DISEASE NOTES

### Flowers and Fruit Trees Damaged by Hornets

BLACKSBURG, VA. — European hornets are causing severe damage to lilacs and some fruit trees in the Richmond area. Arthur P. Morris, associate entomologist at VPI, says the hornets are eating the bark off the branches, sometimes girdling the branches. They also are eating the insides out of apples, leaving only a hull. Many reports have been received from the counties around Richmond, as well as from other parts of the state.

White peach scales also are damaging lilacs, and red-humped caterpillars are troublesome on willows, abandoned apple trees and other trees. It is so late in the season, however, that the control of any

types of caterpillars feeding on the foliage of deciduous trees is not recommended. This is also the wrong time of year to control white peach scale.

Insects damaging cereal and forage crops are at a low ebb. However, alfalfa weevils are again becoming active and some larvae will become evident on alfalfa in infested areas. Damage may not be heavy enough to warrant control measures this fall, but controls are expected to be needed next spring.

Various insects are damaging truck crops in Southeastern Virginia. Beans, both snap and lima, are being damaged by Mexican bean beetles, bean leaf beetles, corn earworms, salt-marsh caterpillars, woolly bear caterpillars, and cutworms. The main insect on kale, collards and similar

crops at this time is the cabbage looper, while pickle worms are still causing varying degrees of injury to cucumbers.

### Wisconsin Stored Grain Threatened by Pests

MADISON, WIS.—Bran bugs and other insects have been making a strong attack on stored grain in many Wisconsin areas during the past month, according to Leo Ley, state ASC program specialist, and E. H. Fisher, University of Wisconsin insect control specialist.

Dr. Fisher points out that since these insects are very small they sometimes go unnoticed. However, if they aren't checked they can make grain unsalable under the federal clean grain program.

### Corn Borer Damage Reported in Arizona

PHOENIX, ARIZ.—With increased corn and grain sorghum acreages in Arizona, insect problems are becoming

more prevalent. This is especially true in some of the lower elevation

In corn this year, the southwestern cornstalk borer is causing the greatest damage, according to Dr. J. N. Roney, extension entomologist for the University of Arizona. So far, most of this damage has been found in Pima, Pinal, and Maricopa counties.

Corn planted at regular plant dates is infested with the borer. In some instances, eight to ten borers have been found in a single cornstalk.

### Midwestern Farm Fertilizers Plans New Mixing Plant

MADISON, WIS.—Midwestern Farm Fertilizers, Inc., Madison, Wisc., has arranged options on sites at Stevens Point and Wisconsin Rapids for the erection, at one or the other of the two points, of a fertilizer mixing plant. While plans for building and machinery layout are being drawn up now, the firm does not predict that the plant will be in operation for the 1955-56 season.

Fertilizer to be produced will be of the granular type. Under license from the Midwestern Phosphate Corp., it will be sold under the Kickapoo Fertilizers brand.

Officers of the corporation are W. Aitken, Madison, president and treasurer; P. Q. Sawin, Madison, vice president; A. D. Strohbar, Savannah, Ga., vice president.

Mr. Aitken is also president and treasurer of Midwestern Phosphate Corp. of Madison which operates a Kickapoo Fertilizers plant at Hiboro. Mr. Strohbar is president of Southern Fertilizer and Chemicals of Savannah, Ga. Mr. Aitken will be general manager of the operation.

### Texas Entomologist Recommends PDB for Peach Borer Control

COLLEGE STATION, TEXAS—Dr. Don King, Texas A&M entomologist, last week recommended that orchardists go back to use of PDB (paradichlorobenzene) for control of peach tree borers in the South.

He made the recommendation about 70 orchardists and allied persons at the Peach and Plum Growers Conference here Oct. 11-12.

Reasons for this suggestion, said, are that DDT requires three extra sprayings in the South, and growers are "lucky to get 85% control" with DDT while PDB gives an average of 98% control.

Dr. King said the peach tree borer is the most damaging pest in southern and eastern orchards.

He recommended use of 1 oz. PDB per grown tree. Growers should ring the base of the tree with crystals, using care not to get closer than three inches from the tree, he said. A cone of loose dirt then should be built from the tree outward until it covers the ring of crystals.

He recommended this treatment between mid-October and mid-November.

### Washington Aerial Spraying Conference Set

WENATCHEE, WASH.—The seventh annual aerial spraying and dusting conference sponsored by Washington State College and Washington Aeronautics Commission will be held here Oct. 18-19. In addition to discussion sessions there will be a half-day demonstration of airplane designs and equipment for applying chemicals from the air.

**SOIL GROUP TO MEET**  
PORTALES, N.M. — The New Mexico Association of Soil Conservation Districts will hold its annual meeting here Dec. 9-10.

Granular Fertilizer  
Output Stays  
Industry Sees

By PAUL L. DILL  
CropLife Editor

WASHINGTON — Persons met to swap the production of granular fertilizer at the second annual Fall Roundtable, held at the Sheraton-Carlton

The affair, arranged by Banchelli, chief agronomist of Davison Chemical Co., W. R. Grace & Co., best brainpower in the country. There were 14 speakers on the two-day program. Presentation was followed by a minute question-and-answer session.

The attendance was more than the attendance at the seminar held last year. The program was well-balanced, basic principles involved in the production of granular fertilizers, the contributions of the experts in their own fields.

A summary of the program was published in the next issue.

The fertilizer industry coincided with the meeting of the National Association of Official Agricultural Chemists, and its various organizations: the Fertilizer Control Officials, the Association of American Fertilizer Officials, and the American Pesticide Control Association.

The meetings of the associations were held consecutively and followed one another. It was a week-long meeting.

The National Fertilizer Association was host at a cocktail party the evening of Oct. 11.

Other seminar held last year was well-balanced, basic principles involved in the production of granular fertilizers, the contributions of the experts in their own fields.

The evening of Oct. 11.

Reports of the fertilizer industry and pesticide control officials will appear in the next issue.

**W. P. Crowley**  
**Carolinians-Virginia**  
**Pesticide Control**

**COLUMBIA, S.C.** — Carolina Chemical Co., S.C., was named Carolinians-Virginia Pesticide Control Assn. at the meeting, held here Oct. 11-12.

Other officers, elected at the meeting, are J. Myron McPhee, McPhee Insecticide Co., Raeford, N.C., second vice president; J. B. Peeler, Peeler Chemical Corp., Raeford, N.C., and John C. Stevenson, Stevenson Chemical Co., Roanoke, Va.

R. W. Stevenson, Stevenson Chemical Co., Roanoke, Va., and A. E. Leavitt, A. E. Leavitt Co., were elected to the board of directors.

W. C. Pickett, F. W. C. Pickett Co., N.C., and John C. Stevenson, Stevenson Chemical Co., Roanoke, Va., were elected to the board of directors.

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CHEMICALS

### SODA ASH

Sodium Carbonate,  
technical 99.2%  $Na_2CO_3$   
58%  $Na_2O$  in  
granular and fine  
granular grades

### LITHIUM

Lithium Carbonate,  
Lithium Chemicals,  
Lithium Ores

### SALT CAKE

Sodium Sulphate  
Anhydrous, 97.0%  
 $Na_2SO_4$  minimum, in  
regular and industrial  
grades

Producers also of—BROMINE CHEMICALS, and a diversified line of specialized agricultural, refrigerant and industrial chemicals.

\*Trade Mark AP&CC

APHID RE

LINCOLN — Infest

by the spotted alfalfa

on County, Neb., by Dr. R. E. Hill, Nebrask

Harold Stevens, co

## Granular Fertilizer Output Studied at Industry Session

By PAUL L. DITTEMORE  
CropLife Editorial Staff

WASHINGTON—More than 125 persons met to swap knowledge about production of granular fertilizers at the second annual Fertilizer Industry Roundtable, held Oct. 11-12 at the Sheraton-Carlton Hotel here.

The affair, arranged by Vincent Sanchelli, chief agronomist for the Davison Chemical Co. Division of W. R. Grace & Co., attracted the best brainpower in the industry. There were 14 scheduled speakers on the two-day program, and each presentation was followed by a 15-minute question-and-answer period.

The attendance was half again more than the attendance at a similar seminar held last year. The program was well-balanced between basic principles involved in the production of granular fertilizer and excitations of the experiences of plant engineers in their own plants.

A summary of the seminar will be published in the next issue of CropLife.

The fertilizer industry round table coincided with meetings of the Association of Official Agricultural Chemists, and its three associated organizations: the Association of Feed Control Officials, the Association of American Fertilizer Control Officials, and the Association of American Pesticide Control Officials. The meetings of the three groups run consecutively and for many of the men, it was a week-long stand.

The National Plant Food Institute was host at a cocktail party and dinner the evening of Oct. 13 to the fertilizer control officials.

Reports of the fertilizer control officials and pesticide control meetings will appear in the next issue of CropLife.

## W. P. Crown Heads Carolinas-Virginia Pesticide Group

COLUMBIA, S.C.—W. P. Crown, Carolina Chemical Co., West Columbia, S.C. was named president of the Carolinas-Virginia Pesticide Formulators Assn. at the group's annual meeting, held here recently.

Other officers, elected at the meeting are J. Myron Maxwell, Maxwell Insecticide Co., Raleigh, N.C., first vice president; J. B. Maddrey, Planters Chemical Corp., Norfolk, Va., second vice president; and W. R. Peele, W. R. Peele Co., Clayton, N.C., secretary-treasurer.

R. W. Stevenson, Kirby Chemical Co., Roanoke Rapids, N.C., and A. E. Leavitt, Apex (N.C.) Chemical Co., were elected to two year terms as directors. They succeed W. C. Pickett, FCX, Statesville, N.C. and John Diem, Southern Agricultural Insecticides, Inc., Hendersonville, N.C.

Dr. J. M. Gayson, Virginia Polytechnic Institute, Dr. Glenn C. Klingman, North Carolina State College, and Dr. J. H. Cochran, Clemson College, were featured speakers during the meeting.

The association will hold a spring meeting in Myrtle Beach, S.C. in May or June, and the fall meeting will be held again at Pinehurst in October, 1956.

### APHID REPORTED

LINCOLN—Infestation of alfalfa by the spotted alfalfa aphid in Dawson County, Neb., has been reported by Dr. R. E. Hill, University of Nebraska extension entomologist, and Harold Stevens, county agent.

# Two-Step Action

**supplies nitrogen all season**

**Step 1**

**QUICK-GROWTH**  
Half of the nitrogen immediately available for rapid early growth

**Step 2**

**SUSTAINED GROWTH**  
Half of the nitrogen released slowly throughout growing season

CSC Ammonium Nitrate Fertilizer provides a steady supply of nitrogen from the time it is spread until your crops are ready for harvest. A minimum of 33.5% nitrogen is guaranteed. And because this 33.5% nitrogen consists of quick-growth nitrate nitrogen and sustained growth ammonia nitrogen, two-step action is possible.

CSC Ammonium Nitrate Fertilizer is shown here in its exclusive actual size. It flows freely, spreads evenly, never clogs or sticks in the spreader. Low-moisture CSC Ammonium Nitrate is specially coated to prevent caking or lumping and packed in sturdy bags to insure continued good condition during storage.

Spend your fertilizer dollar wisely — ask for CSC's green and white bag the next time you buy.

A Product of  
**COMMERCIAL SOLVENTS CORP.**



**NITROGEN THE HEART OF THE HARVEST**



Melvin E. Wierenga

**CALSPRAY APPOINTMENT**—Melvin E. Wierenga's appointment as manager of the new foreign sales department of the California Spray-Chemical Corp. at Richmond, Cal., was recently announced by A. W. Mohr, president of Calspray. The new department will be Calspray's fifth operating department. Calspray subsidiaries in Mexico, Insecticidas Ortho, S. A.; France, California Spray-Chemical Compagnie Francaise, S.A.R.L.; and Canada, Ortho Agricultural Chemicals Limited; as well as Calspray's own operations in foreign markets will be supervised by Mr. Wierenga. Richard B. Auer, previously manager of Calspray's smaller foreign sales division under the marketing department, has been promoted to the new position of manager, Western Hemisphere-Orient division, foreign sales department.

### Fletcher Announces Personnel Appointments

**ROSEMEAD, CAL.**—New personnel appointments for Fletcher Aviation Corp., Rosemead, Cal., were announced recently by Wendell S. Fletcher, president.

Those named in the announcement were Philip W. McLane, chief engineer; Lloyd H. Swanson, staff director of engineering personnel; Robert S. Ricketts, in charge of master production planning; Howard Cordell, personnel manager; Stanley Christensen, contract administrator; Todd Derlachter, comptroller; Murray E. Liebman, head of statistical quality control; Raymond G. Brewer, assistant to the president; Herbert C. Parker, consulting engineer in charge of Fletcher's Washington, D.C. office, and George S. Kaibel, Dayton office representative.

### Hercules Powder Plans Plastic Plant

**WILMINGTON, DEL.**—Hercules Powder Co. has announced plans to enter an entirely new field of chemistry, with the construction of a plant at Parlin, N.J., for the production of new-type high molecular weight polyethylene.

The plant, with an annual capacity of approximately 30 million pounds, will eventually involve expenditures in the neighborhood of \$10,000,000, including new construction, raw materials, and conversion of some of the existing facilities at Hercules' present Parlin plant.

### AGENT HONORED

**ST. PAUL**—Jasper I. Swedberg, Redwood County agent at Redwood Falls since 1937, has been chosen Minnesota's candidate for the title of "outstanding extension worker in weed control" in the North Central States. Thirteen other states and three Canadian provinces are asked to nominate candidates for the honor.

### Iowa Scientist First Winner of Charles F. Spencer Award

**KANSAS CITY**—Dr. Ralph M. Hixon, dean of the Graduate College at Iowa State College, Ames, has been named the first winner of the Charles F. Spencer Award for meritorious contribution to the field of agricultural and food chemistry. Louis H. Goodson, chairman of the Kansas City Section of the American Chemical Society, the organization administering the award, announced the result of the jury's balloting.

Dr. Hixon was elected the award recipient by an anonymous jury of twelve leaders in agricultural and food chemistry. More than 45 persons were nominated for the award.

**The Charles F. Spencer Award** was founded by Kenneth A. Spencer, president of Spencer Chemical Co., Kansas City, in honor of his father, first chairman of the board of the chemical company, Charles F. Spencer, who died in 1942. The award will include a gold medal and \$500.

Dexter French, associate professor of chemistry at Iowa State College, nominated Dr. Hixon because of his distinguished record as an educator and his research work on the chemistry of corn. This research proved that the chemical properties of a plant could be changed by natural breeding processes instead of by a manufacturing process after the crop is harvested.

As an educator Dr. Hixon has been associated with Iowa State College since 1923, serving as a professor of chemistry and chairman of the chemistry department. He has been dean of the Graduate College since 1948.

On Nov. 11, the Kansas City American Chemical Society Section will hold its annual fall chemical conference at which time the award will be presented.

### FALL 2,4-D APPLICATION

**AMES, IOWA**—One application of 2,4-D in the fall will kill as many dandelions as two spring applications say Iowa State College extension horticulturists and weed control specialists.

### MORE BEEF

G. E. Smith, Missouri agronomist, reports that beef production has been boosted from less than 100 pounds to more than 500 pounds per acre by pasture improvement practices in some Midwestern demonstrations.



R. Kirby Shirley

### Governors Ask for More Flood Control Money; Massachusetts Losses Assessed

**BOSTON**—The New England Governors Conference here has asked the federal government to provide an additional \$51,953,000 for flood control projects and a hurricane survey in the six state region.

President Eisenhower was urged in another resolution by the New England chief executives to support a federal disaster insurance program. Insurance companies do not write policies on flood damage which often results in total property loss. Farmers in Massachusetts, Rhode Island and Connecticut suffered severe crop and property loss in the flood caused by the backlash of Hurricane Diane this year and were hurt in hurricanes Edna and Carol last year.

Five governors and a representative of Maine's governor, heard the flood disaster termed the greatest in physical destruction of any flood in American history.

**Lt. Gen. Samuel D. Sturgis**, chief of the Army Corps of Engineers, placed total property damage from the August hurricane rains at 1.5 billion dollars.

The governors heard in a report from Ellsworth Bunker, American Red Cross president, that total Red Cross flood expenditures now amount to \$3,234,790 and will increase because of continuing need for relief.

Massachusetts has received a total of \$456,773, Connecticut \$1,707,008 and Rhode Island \$104,768.

Governors present at the Boston meeting were Abraham A. Ribicoff of Connecticut, Lane Dwinell of New Hampshire, Joseph B. Johnson of Vermont, Christian A. Herter of Massachusetts and Dennis J. Roberts, Rhode Island.

Meanwhile, 1955 flood damage to farms in Massachusetts was generalized with an over-all picture after a personal survey conducted by L. Roy Hawes, commissioner, and Charles F. Shelnut, assistant commissioner, of the Department of Agriculture and a general meeting of the county agents. Difficulty was encountered in putting a money value on the various types of damage, according to Mr. Shelnut.

Vegetable crop damage was put at approximately 1,000 to 1,100 acres. Potato damage by rot approximated 450-500 acres. New land seedings were very small, it was reported, because of the time of the flood. Only about 50 acres were affected.



Pearson E. Neaman

Some 200 farms were involved in field damage by water and erosion. Fifty farms had heavy crop damage.

An estimated 10% of the unharvested tobacco crop in the Connecticut Valley area was damaged. Losses were held down as nearly 60 or 70% had been harvested before the flood.

No figures for livestock loss were given in the report, but it was indicated that poultry farms in the direct path of the floodwaters had many thousands of birds washed away and buildings and equipment damaged.

Land damage in Worcester County was estimated about \$150,000, three-fourths representing cost of land reclamation. Losses were confined mostly to the southern area.

The U.S. Department of Agriculture, meanwhile, pointed out that build-up of mosquitoes and house flies followed the storms and floods.

Severe flooding in many areas of Massachusetts contributed to severe infestations of mosquitoes and house flies. Mosquitoes have been numerous and annoying in the Norfolk area of Virginia. They have appeared in great numbers throughout the Rio Grande Valley of Texas after floods caused by Hurricane Edna.

Mosquitoes have been more numerous in Sussex, Kent, and southern New Castle counties of Delaware than at any time during the past 15 years. They have multiplied in Rhode Island, Pennsylvania, North Carolina and Florida. They also increased after recent rains and storms in Utah, and have been annoying and plentiful in parts of Wisconsin and Idaho. Mosquito populations have passed their summer peak in Colorado and are on the downward trend.

House flies became abundant in the Woonsocket area of Rhode Island following floods, around Maryland barns following recent rains, and in Utah and New Mexico.

### Harvest Weather Returns to Mid-South

**SAN FRANCISCO**—Farmers in the Mid-South operated on two fronts last week—harvesting crops of cotton and rice and planting small grains and cover crops.

Extension officials in Arkansas, Mississippi, Missouri and Tennessee reported that activities increased as harvest weather returned after the rains of the previous week.

The big questions were where to get enough labor to harvest the cotton crops and when the crop will be ready for the mechanical pickers.

Cotton was about 75% picked in South Mississippi, 20% in the northern part of the state and from 40 to 50% in central Mississippi, according to T. M. Waller, Mississippi extension cotton specialist.

W. R. Thompson, extension pasture specialist, reported harvest of an "excellent crop" of soybeans is in full swing. He said farmers are busy planting winter grazing and cover crops.

Sweet potato harvesting is beginning in commercial production areas, said Chesley Hines, extension horticulturist. Yields are improved over last year.

The Arkansas Agricultural Extension Service said additional cotton pickers are needed in the major cotton counties, even though intermittent rains have cut down on picking days. Rains were a boon to pasture and seeding of small grains continued as a result of the adequate moisture.

### HORTICULTURAL SHOW

**BLACKSBURG, VA.**—The annual Virginia Polytechnic Institute student horticultural club's show and auction sale is being planned as a feature of homecoming weekend, October 28-29.



Kimon T. Karabatos Staff of

**WASHINGTON**—Kimon T. Karabatos, former administrator of the U.S. Department of Agriculture, has been appointed to the National Agricultural Research Service, L. S. Hitchner, secretary, has announced.

Kim T. Karabatos' duties will be special legislative and special

A native of Fairbank, Kim T. Karabatos was graduated from the University of Nebraska and joined the staff of the U.S. Department of Agriculture.

He was area manager of the U.S. Soil Conservation Service in Ottoburg (Neb.) and while on Congressmen, he worked on the Public Law No. 518.

Mr. Karabatos served as a corps intelligence and combat correspondent during World War II and the Korean War.

**88 Firms Register for California**

**SAN FRANCISCO**—A total of 288 small commercial firms of the state of California by the end of next June 30.

The Bureau of the U.S. Department of Agriculture announced

registrants, listing

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Mr. Karabatsos served in Marine  
Corps Intelligence and as a Marine  
Combat correspondent during World  
War II and the Korean War.

88 Firms Register  
for California Sales

SAN FRANCISCO—There was a  
and total of 288 firms registered  
sell commercial fertilizers in the  
ate of California by the end of Sep  
ember, with licenses effective  
rough next June 30.

The Bureau of Chemistry of the  
California State Department of Agriculture  
announced the number of  
registrants, listing a slight preference  
for northern California locations  
over southern California. Approximately 123 firms were listed as  
doing business north of the Tehachapi  
Mountains in California, and 118 below  
this line. Forty-seven additional  
firms were from out of the state.  
At the same time, some 132 firms  
were registered to sell agricultural  
minerals during the current fiscal  
year. Some 72 of this number were  
located in northern California, about  
in the southern half of the state,  
and the remaining 16 were from out  
of the state.

An additional 11 firms were reg  
istered as jobbers, divided seven and  
four between the two sections of the  
state. A tabulation of the number  
auxiliary plant chemicals reg  
istrants on the roster showed 24 firms,  
with ten of them giving out of state  
addresses, eight from northern California  
and the remaining six from southern California.

BALANCE NEEDED  
EAST LANSING, MICH.—Michigan  
State University research men  
report that it takes balance in fertilizer  
to give top yields of crops.  
at yields were increased by 45 bu.  
per acre, when a nitrogen top dressing  
was added to soil already high in  
phosphate and potash in Michigan  
soils. But the nitrogen did little good  
when the soil was short of phosphate  
and potash, the research men report.

## Eston Completes Two Years Without Lost-Time Accident

LOS ANGELES — The Eston Chemicals Division of American Potash & Chemical Corp. recently completed two years without a lost-time accident. The division, located in Los Angeles and employing an average of approximately 100 persons, reached a total of nearly 400,000 man-hours for the period.

Attaining the two-year safety mark was attributed by Russell Sunderlin, plant manager, to three main causes: an intensive modernization plan, the company's safety-education program, and the safety-promoting activities of the plant union, the CIO Oil, Chemical and Atomic Workers, Local 1-128.

Considerable modernization has been underway at the division during the past two years. As an example, the agricultural chemicals dust plant has been installed with complete safety equipment including ventilating and

dust-collecting units to protect workers.

The company's safety program was revised approximately two years ago to include an employee education program which was inaugurated on the premise that "human failure" caused most accidents, rather than mechanical failure. Weekly safety education meetings have been held with Eston employees to discuss general safety subjects and specific danger problems.

The union's safety committee has met regularly with the Eston safety committee to inspect the plant for industrial hazards, resulting in eliminating potential hazards.

### FARM FORUM

COLUMBIA, MO.—Farm surpluses will be the subject of discussions at the seventh annual forum at the University of Missouri November 1-2, according to Wendell McKinsey, of the University agricultural economics department and chairman of the forum program committee.

## MCA Named Winner of National Safety Council Association Award

WASHINGTON—The Manufacturing Chemists' Assn. for the second consecutive year has been selected for a National Safety Council Association Award.

The association safety awards are made annually by the NSC to those trade associations who most actively promote safety in small business.

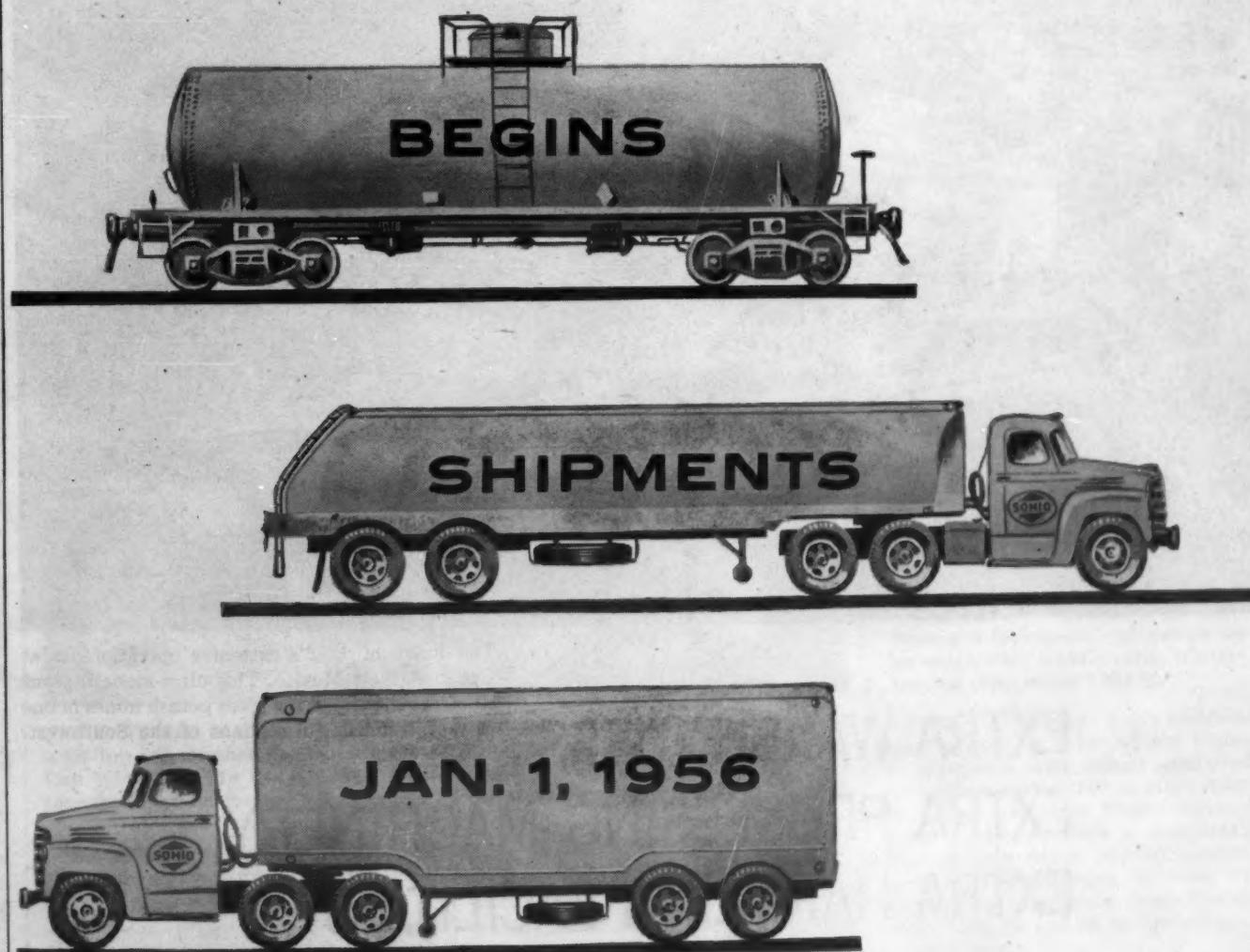
The award, to be presented in Chicago Oct. 19 during the 43rd National Safety Congress, will be accepted on behalf of MCA by S. M. MacCutcheon, chairman of the MCA general safety committee. Mr. MacCutcheon is director of safety, the Dow Chemical Co., Midland, Mich.

### CONSERVATION COURSE

NEWBERRY, S.C.—The Newberry Soil Conservation District will sponsor a course in conservation of soil in the Newberry County schools.

## Your NEW SOURCE for Nitrogen Chemicals

### Sohio Chemical Company



Our fleet of new aluminum  
or stainless steel tank cars  
and trucks will be ready to serve  
you starting January 1<sup>st</sup>, 1956.

Centrally located in the agricultural mid  
west, Sohio Chemical Company offers you  
fast, low cost delivery. Our large storage  
facilities and extensive selection of nitrogen  
solutions can supply your most complex  
requirements.

AMMONIATING SOLUTIONS  
ANHYDROUS AMMONIA  
AQUEOUS AMMONIA

UREA (PRILLED)  
NITRIC ACID  
UREA-AMMONIA SOLUTIONS



**SOHIO CHEMICAL COMPANY**  
LIMA, OHIO

## UMBAUGH PLANTS

(Continued from page 1)

as a source material for anhydrous ammonia, Mr. Umbaugh said. They will employ about 200 persons when in full production.

The Umbaugh firm, a Tennessee corporation, was formed in San Antonio, Texas, in 1946 and moved its main offices here in 1952. It also maintains offices in Plymouth, Ind. The company distributes agricultural chemicals direct to farmers, maintaining anhydrous ammonia storage and distribution plants at Hamlet, Lake Village and Marengo, Ind., and Ocala, Fla.

All types of fertilizers are distributed to farmers in 25 states east of the Rocky Mountains.

The firm expects to go into the production of mixed fertilizer at a new \$300,000 plant at San Pierre,

Ind., Nov. 1. The plant will produce 1,000 tons of mixed fertilizer daily, Mr. Umbaugh said.

The concern is the outgrowth of a research contracting business developed by Mr. Umbaugh and his wife, Mrs. Phyllis Umbaugh, for the study of plant and animal physiology. Soon the soil consulting firm began supplying farmers with chemicals as well as with information on soil needs.

Research work now is handled by Brookside Laboratories at New Knoxville, Ohio.

Wide attention now is being given an Umbaugh project involving the Brookside Laboratories. The firm is using 15 airplanes to fly farmers to the laboratories from Michigan, Ohio, Wisconsin, Illinois, Iowa and Indiana, each day flying is possible.

There the farmers—and some 5,000 will visit the laboratories under present plans—are shown the full cycle of research used to test their soil and prescribe what chemicals are needed.

## Quarter Sales In South Carolina Total 41,355 Tons

CLEMSON, S.C.—Fertilizer sales in South Carolina during the period July 1 to Sept. 30, 1955, totaled 41,355 tons, according to the state Department of Fertilizer Inspection and Analysis. The total includes 26,454 tons of mixed goods and 14,901 tons of materials.

Leading grades during the period were 3-12-12, 8,496 tons; 3-9-9, 5,087 tons, and 5-10-5, 3,846 tons. Leading material was ammonium nitrate, 4,827 tons.

### WESTERN MEETING PLANNED

SAN FRANCISCO—The 6th Western Packaging and Materials Handling Exposition will be held in the Pan Pacific Auditorium, Los Angeles, during the summer of 1956, it has been announced. Dates for the meeting are July 10-12.

## CANADIAN POTASH

(Continued from page 1)

two operations will likely produce some 425,000 tons annually of muriate of potash (60% K<sub>2</sub>O) for a total dollar sales value of about \$1 million. About 95% of current potash production—most of which comes from the Carlsbad mines in New Mexico—is used by the fertilizer industry.

The largest market will be in the U.S. It is claimed Saskatchewan potash will be able to compete with New Mexico mines for some 40% of the total U.S. market, currently running about two million tons annually. Potential export markets are also seen in the Far East, particularly Japan and Korea. It is thought Saskatchewan potash should have little difficulty in displacing a major part of the current 70,000 tons a year imported by Canada.

With the Saskatchewan deposit removed from the main market, rail freight rates will be important in marketing the potash successfully.

Canadian railways, however, have already indicated their willingness to quote rates from Saskatchewan to Ontario equal to those from New Mexico to Ontario.

One of the program's incentives is the steadily growing potash consumption rate both in the U.S. and Canada. In Canada it is reported to have jumped 175% since 1940; in the U.S. it has increased by 400%. Market experts predict an annual growth trend of around 6% a year for the next decade in both countries.

In Canada, over half the potash consumed in fertilizers used in the mixed farming areas of Ontario, with Quebec being the second largest regional consumer, followed by the Maritime provinces. The Prairie provinces wheat areas are not large users of potash. Limited quantities are used in British Columbia.

Cost of both Saskatchewan developments are estimated to run between \$18-20 million each, with surface buildings, including refinery and equipment accounting for almost half of the amount. The large diameter shafts which must be put down below the 3,000 ft. level, are estimated to cost from \$2.5 to \$3 million each. Potash Company of America has already spent an estimated \$5 million in probing potash reserves and drilling some 28 freeze holes to free sedimentary material for shaft sinking.

Although no one has come up with authoritative reserve estimates on Saskatchewan's potash beds, they are known to be huge. A number of potash-bearing cores have been taken from oil drilling ventures scattered across central Saskatchewan. It is not known yet if the various cores represent several basins or one continuous bed.

A number of other firms have secured options on potash lands from the Saskatchewan government, and are currently investigating the production picture.

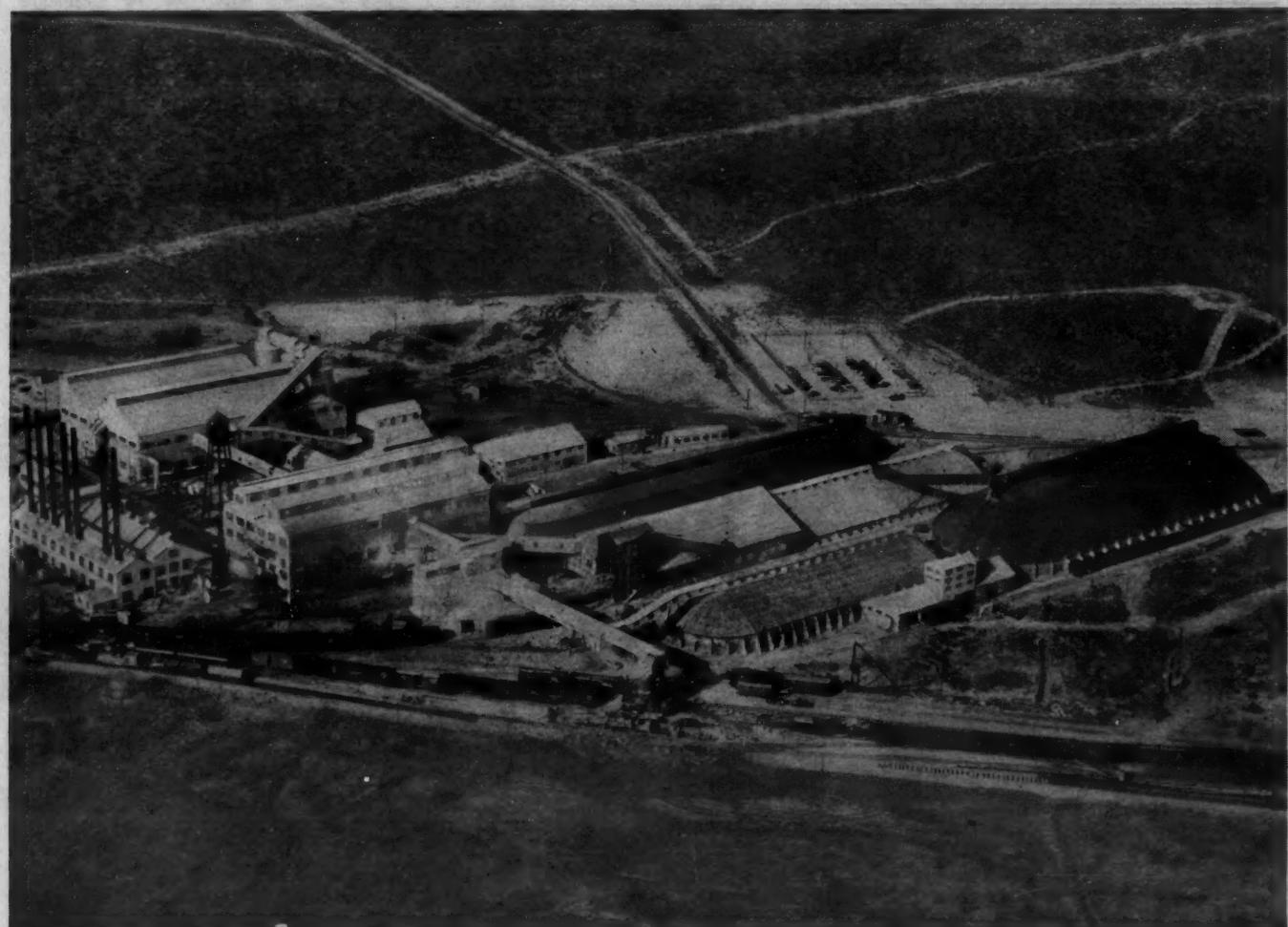
The Saskatchewan government will profit from a 4 1/2% royalty on all potash produced. This could work out to around \$275,000 a year on the two projects now lined up.

### Washington Weed Men Schedule Convention

8

TACOMA, WASH.—The annual convention of the Washington State Weed Assn. will be held Oct. 26-27 at the Vocational School Auditorium here.

Topics on the convention agenda will include Benton County's weed control program; the cost of weeds in Washington; trees not weeds; weed and brush control on timberland; chemical weed killers; selection and operation of groundrig sprayers; weed research findings in Western Washington; and weed control regulations.



The heart of USP's extensive operations is at Carlsbad, New Mexico. This ultra-modern plant stands at the site of the great potash mines in one of the most colorful sections of the Southwest.

# EXTRA WAREHOUSES EXTRA PROCESSING MACHINERY EXTRA HANDLING FACILITIES ADD UP TO EXTRA SERVICE FOR OUR CUSTOMERS

THE RECENT ADDITIONS to our plant facilities, completed early this year, were made primarily to improve delivery of our products to customers during peak months.

As a result, we have been successful in keeping deliveries completely up to date throughout the year.

Just as a good farmer returns part of his income to the earth in the form of fertilizers to assure better crops, so we have returned part of our income to increased plant facilities that will assure faster, more efficient service to our customers.



REG. U.S. PAT. OFF.

HIGHGRADE MURIATE OF POTASH 62/63% K<sub>2</sub>O  
GRANULAR MURIATE OF POTASH 60% K<sub>2</sub>O MIN.

UNITED STATES  
POTASH COMPANY  
INCORPORATED

30 Rockefeller Plaza, New York 20, N.Y.

Southern Sales Office

Rhodes-Haverty Building, Atlanta, Georgia

# Better Selling

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

## Good Display Program Builds Sales For Ohio Farm, Garden Supply Dealer

By AL. P. NELSON  
CropLife Special Writer

An excellent display program is being coupled with good salesmanship at the Berry Seed Co. store at Van Wert, Ohio by Art Zielke, manager, and his staff on farm seeds, chemical and garden supplies.

From a retail merchandising standpoint, this neat store certainly ranks with the best. It has excellent fluorescent lighting, good fixtures and the walls are done in knotty pine. The store and warehouse are housed in a quonset type building which has been painted white, and three large display windows have been put into the front, making it a visual store. The store sets back about 75 feet from the highway at the outskirts of Van Wert, and this means that patrons have plenty of parking space, a factor which they like.

Mr. Zielke, who has been manager of the store for four years, says that his patrons are farmers and local gardeners and home owners. The store does a large volume on seeds and garden supplies, including insecticides, weed killers, sprayers and the like. The store also sells power lawn mowers, fertilizer carts, lawn rollers and other equipment.

"The public is spending a lot of money on lawns, gardens and home grounds," reports Mr. Zielke. "While we do the greatest share of our volume with farmers on seeds, etc., we get a fine chunk of business from homeowners."

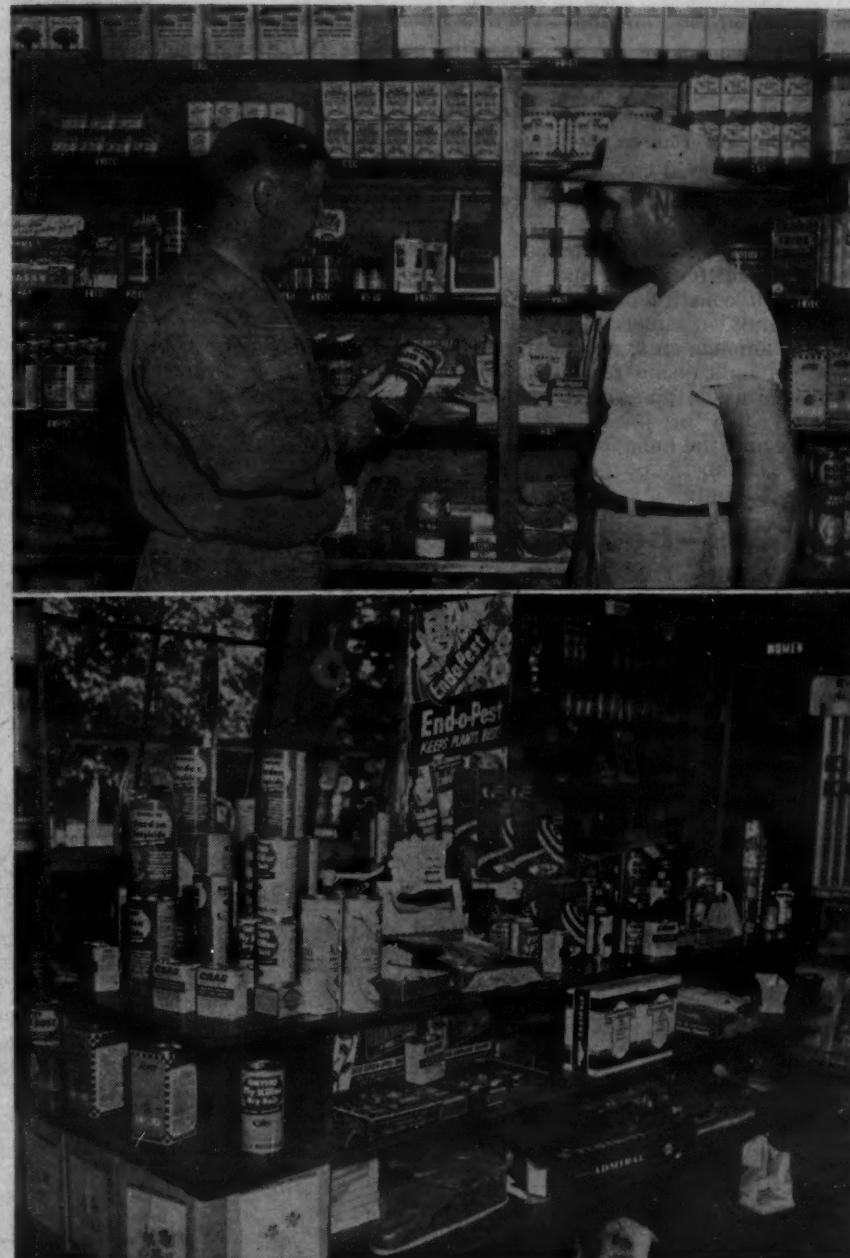
The homeowner will listen carefully when we expain a new power mower, or a turf builder, or insecticides for lawn, garden or home orchard. It is not unusual for homeowners to spend \$100 to \$300 on gardens and lawns in one year, and the alert garden supplies store can get much of this business."

Mr. Zielke uses a display idea at the front of his store which is easily adaptable in many localities. He uses various samples of low height fencing, wooden and metal and makes a composite fence in front of his building. It is very attractive, utilitarian, and at the same time it sells fencing. What more can one ask of a display?

"Items like decorative fence have to be displayed to catch the attention of the public," states Mr. Zielke. "People will usually not think of these things, unless you bring them to their attention. We get many extra sales through such display ideas."

Anxious to get its share of the insecticide and sprayer business, this store carries one large island of insecticides, as well as a long wall section. This impresses customers who realize that here is a store with a large stock of insecticides to cover many needs.

"We try to keep up on the new products which are constantly coming on the market in the insecticide field," reports Mr. Zielke. "This study pays, for customers are always asking us about this or that product which they saw mentioned or advertised in a national magazine. They expect us to know about these new



NEAT STORE MEANS MORE BUSINESS—A neat display program, along with top salesmanship, means more business for the Berry Seed Co. store at Van Wert, Ohio. In the upper photo, Art Zielke, store manager, is describing a rose dust to a customer. Below is one of the stores excellent pesticide displays.

products and their worth. Most of the time we can give a satisfactory answer."

Whereas many homeowners and gardeners used very little insecticide control in former years, most of them are now buying their share of pesticides, says Mr. Zielke. The average home owner is not content until he has fertilized his small plot of ground, treated his garden for insects, bought and used good garden tools, and has a power lawn mower handy to keep the lawn mowed.

Because customers today need and want so much information about new products, especially in the seed and insecticide fields, it pays a store manager and employees to be extra willing and patient in explaining the products and their use, Mr. Zielke asserts.

Such explanations will pay off in additional sales and regular patronage in many instances as the customer makes good use of what he has been told to buy.

At the rear of the store, the firm

has sizable warehouse space and seed cleaning and treating equipment, facilities which attract additional traffic and volume.

While excellent window display, plus inside displays help to bring many products to the attention of customers, Mr. Zielke also does some newspaper and direct mail advertising to his trade area. Most of the volume done by the store is called for by customers themselves. With the exception of large seed purchases, most of the sales are for cash. This simplifies the collection problem, Mr. Zielke asserts.

### SPRAYING ADVISED

EAST LANSING, MICH.—Michigan farmers are being urged by Michigan State University to spray their alfalfa and clover fields with MCP to keep the yellow rocket away next spring. This is the advice being given by Boyd R. Churchill, a farm crops research specialist at Michigan State.

Richer  
Fields for  
Dealers

## Fertilizer Boosts Pasture Yields In Missouri Tests

COLUMBIA, MO.—Results of demonstrations conducted by Missouri county extension agents show that proper fertilizer treatment can greatly boost pasture yields.

Marshall Christy, University of Missouri extension soils specialist, reports that 13 fields of orchard grass or tall fescue, along with other grasses and legumes, were established on fields previously correctly treated with lime, phosphate and potash.

Most of these fields were pastured but small areas were protected and harvested to find treatment response. Treatments were the same on each field. Three treatments were used—one strip received 60 lb. each of nitrogen, phosphate, and potash; another received only 60 lb. of actual nitrogen, and the remaining strip had no treatment.

Strips correctly treated provided twice as much forage as did the untreated strips and strips treated with nitrogen provided 1½ times more forage than the untreated.

In Texas County, W. F. Harry gave tall fescue a complete treatment on one strip and it produced 2,100 lb. air dry forage while the untreated strip yielded only 700 lb. an acre.

Also in Texas County, Ernest Skirvin harvested 28 bales of orchard grass an acre from his plot given complete treatment while the untreated plot made only 18 bales.

Vernon Goggin, Reynolds County, had 5,240 lb. orchard grass an acre on his treated strip. The untreated check strip made 4,000 lb. Tall fescue on Cleo Gastineau's farm, Reynolds County, produced 3,490 lb. an acre where treated and 2,200 lb. where untreated.

Ralph Lesh, Iron County, received 5,820 lb. tall fescue an acre from a maintenance application on his completely treated strip. His untreated strip made 1,797 lb.

Crawford County demonstrations were located on fields testing higher in phosphate and stands contained more ladino clover than in other counties. Mrs. Katherine Moore received 8,740 lb. fescue from a completely treated strip which had an application of 60 lb. nitrogen. Without the nitrogen, a completely treated strip made 7,000 lb. and an untreated area made 3,000 lb.

## Wide Row Corn Yields 124 Bu. an Acre

MADISON, WIS.—Yields as high as 124 bu. per acre have come from wide row corn used as a nurse crop for hay and cover crops, Wisconsin agronomists report.

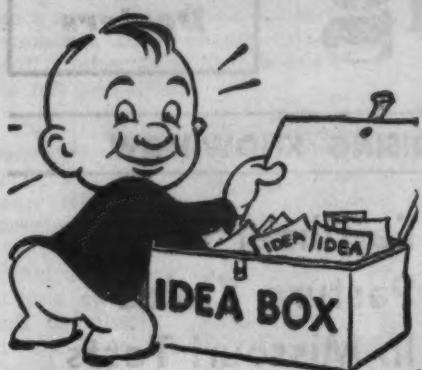
The 124-bu. yield was grown in 60-inch rows on fertile soil in 4-year tests at one Wisconsin station. The yield from conventional 40-inch rows averaged 119 bu. And from 80-in. rows it was 80 bu. In all cases the plant population was 16,000 stalks per acre.

### BECOMES DEALER

SPRINGFIELD, ILL.—The Sweet & Canterbury Seed Co. here recently became a dealer for Chemizer Solution Fertilizer.

# Better Selling

Richer Sales Fields for Dealers



## What's New...

### In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

#### No. 6326—Ammonia Converter

The J. C. Carlile Corp. has available detailed information concerning its new portable ammonia converter. The firm develops and produces a line of portable ammonia converters for the production of aqueous ammonia wherever desired. Company spokesmen say efficiency approaches 100%. Check No. 6326 on the coupon, clip and mail it to secure more complete information.

#### No. 6325—Soils Handbook

The Davison Chemical Co., Division of W. R. Grace & Co., has published a 32-page handbook on "Soils, Phosphates and Fertilizers" by Vincent Sauchelli, the company's agronomist. It deals with fertilizer chemistry in laymen's terms, and is addressed, in the author's words, to "salesmen, farmers, and laymen in general to give in simple, understandable language some essential, practical information on the feeding of soils and crops." Mr. Sauchelli discusses kinds of soil, what soils contain moisture supply, water requirements of crops,

controlling soil moisture, how plants feed, chemical fertilizers and soil fertility, plant constituents, plant nutrients, humus, commercial fertilizers and soil amendments, secondary and trace elements, using fertilizers, fertilizer materials, phosphates and the relative value of phosphatic fertilizers. Secure the handbook by checking No. 6325 on the coupon and mailing it to Croplife.

#### No. 6329—Boom

The John Blue Co. has available a new boom for applying nitrogen solutions such as Solution 32. The new boom is 21 ft. wide and when used with the Blue model "NSF" solution pump, up to 50 gallons of solution per acre may be applied. The company announcement states: "All solution is carried by hose and all fittings and orifices are constructed of non-corrosive materials. The orifices are spaced every 12 in. to give even coverage and they are designed to give a straight uniform stream to reduce foliage burn when ammonium nitrate solutions are used. Where fan type nozzles are desired it is a quick and easy matter to install them on the boom as all threads are standard pipe size." Boom attachments are avail-

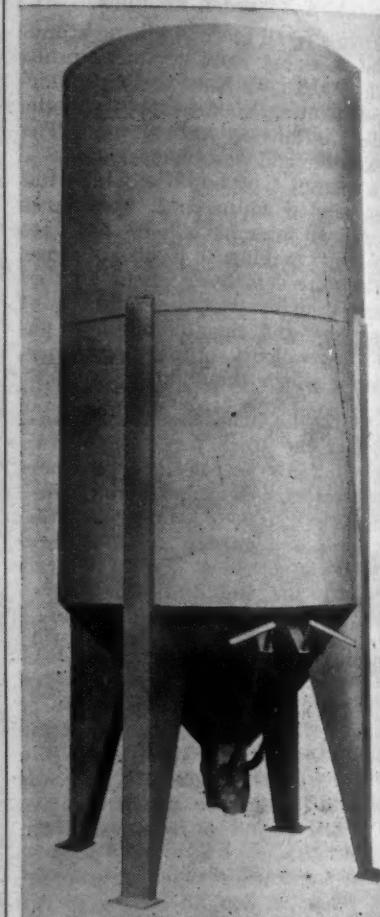
able for several of the company's trailer type applicators or the boom may be obtained as a separate item for "custom mounting." To secure more complete details check No. 6329 on the coupon and mail it.

#### No. 5285—Rodent Killer

A new 2-way rat and mouse killer offer for consumers has been introduced by Dr. Hess & Clark, Inc. It consists of a 1 1/4-lb. package of Dr. Hess Warfarin, a cereal bait containing warfarin and a regular size package of Dr. Hess rat and mouse killer, a liquid rodenticide made with pivalyn. The consumer is offered a 20¢ saving and gives retailers a 43% mark-up, according to company officials. The product is packed in a self-contained shipping carton that opens into a 3-color display piece. Secure more details by checking No. 5285 on the coupon and mailing it.

#### No. 6327—Spray Catalog

Catalog No. 30 has just been published by Spraying Systems Co. It covers spray nozzles and accessories for all types of farm, ranch, orchard and garden spraying. The 20-page catalog includes illustrations, description and spraying data on all types of nozzles for boom spraying, broadcast spraying, hand spraying and airplane spraying. Information on accessory equipment is also included, such as adjustable valves, strainers and spray guns. Included in the catalog are tables for calculating field coverage of chemicals in terms of gallons per acre and gallons per minute. Secure the catalog by checking No. 6327 on the coupon and mailing it.



swing control gate (not a sliding valve) for more effective discharge control. The bin is made of 12-gauge steel with 16-gauge steel used for the top. An 18 in. manhole and cover for loading are located on the top with a ladder leading down the inside for access into the bin. Company officials said the unit serves companies selling in bulk to provide to their customers and manufacturers storing ingredients. Check No. 5299 on the coupon and mail it to secure more information.

#### No. 6322—Nozzles

A line of nozzles for injecting nitrogen solutions, anhydrous ammonia and acids separately or in combinations has been developed by Thackston-Davis Supply Co. The injection nozzles are refinements of a basic single-manifold design developed by H. B. Davis, Spencer Chemical Company's South Carolina sales representative. By injecting ammoniating solutions approximately 1 in. from the mixer flights they provide better ammoniation than can be obtained from conventional spray pipes. By deflection and diffusion, solutions are brought into intimate contact with the superphosphate and potash. From four to eight nozzles are used, depending on the size of the mixer. Marketed as "DID" (diffusion, injection and deflection) nozzles, the line includes single-manifold nozzles for use of solutions; dual-manifold nozzles, for use of solutions and anhydrous ammonia; and triple-manifold

CROPLIFE, October 17, 1955

zles, including one to three more complete on the coupon and mail it.

#### No. 6313—Applicator

The John Blue Co. has available a trailer-type applicator for the application of nitrogen solutions "20-NS." The unit is available with either underground application or surface application. The unit is equipped with a developed model of a nitrogen solution applicator is claimed to be almost every need with a 14-ft. tool bar and top dressing or fertilizer for broadcast application.

5 gal. of solution applied with the tool bar attachment. Up to 200 gal. are pressure or non-pressure may be used. Check No. 6313 on the coupon, clip and mail it to obtain more complete details.

#### No. 6312—Plastic Liner

A booklet containing applications of "Jumbo" plastic liner for now available from the John Blue Co. The booklet construction features the ways in which the liner can solve problems as well as illustrated is a partial application of polyethylene solution set by checking No. 6312 on the coupon and dropping it.

#### No. 6320—Earth Borer

United States announces the release of "Barnard's," "The Suspender," "Waiting Harvest," and "The South." The book is only in certain colors and available in 35mm. from 12 to 38 mm. information about it is produced by United States by checking No. 6320 on the coupon and mailing it.

#### No. 6316—Sprayer

A new "Prentox Pyronyl" has been developed by the Drug & Chemical Co. It contains a suggested combination of fungicides. Coplan request. Check No. 6316 on the coupon and drop it.

#### No. 6321—Sprayer

A portable sprayer as insecticides, deodorizers, floor dressings, and glass cleaners from Spraying

Send me information on the items marked:

- No. 5285—Rodent Killer
- No. 5299—Storage Unit
- No. 6312—Plastic Liner
- No. 6313—Applicator
- No. 6314—Sales Aids
- No. 6316—Bulletin
- No. 6317—Liming
- No. 6318—Earth Borer
- No. 6319—Scale
- No. 6320—Films
- No. 6321—Portable Sprayer
- No. 6322—Nozzles
- No. 6323—Equipment
- No. 6324—Fertilizer System
- No. 6325—Soils Handbook
- No. 6326—Ammonia Converter
- No. 6327—Spray Catalog
- No. 6329—Boom

NAME .....

COMPANY .....

ADDRESS .....

SLIP OUT—FOLD OVER ON THIS LINE—FASTER (STAPLE, TAPE, GLUE)—MAIL

FIRST CLASS  
PERMIT No. 2  
(Sec. 34.9,  
P. L. & R.)  
MINNEAPOLIS,  
MINN.

**BUSINESS REPLY ENVELOPE**

No postage stamp necessary if mailed in the United States

**POSTAGE WILL BE PAID BY—**

Croplife

P. O. Box 67,

Reader Service Dept.

Minneapolis 1, Minn.

## Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

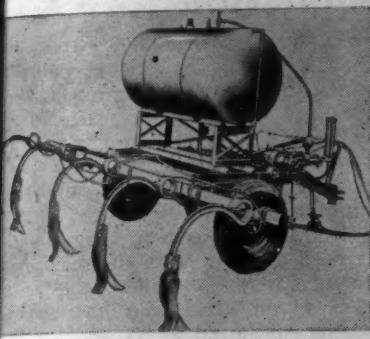
#### No. 6318—Earth Borer

A new vibratory earth borer that makes a fertilizing hole without removing any soil is now available. Manufactured by the Mall Tool Co., the unit prepares soil for a more effective and economical method of fertilizing trees and shrubs. The self-contained unit consists of the 5 1/2 h.p. model 2MG gasoline engine and a 7-ft. flexible shaft which drives a vibrating head. When the operator presses the throttle, the rotary motion transmitted through the flexible shaft into the vibrating head becomes

ing action which is in one to three materials. To secure more complete details check No. 6312 on the coupon and drop it in the mail. Fertilizer is the same. To secure more complete details check No. 6318 on the coupon and drop it in the mail.

## Bulk Unit

Rock storage unit for minerals, rock phosphate, free-flowing materials developed by the John Blue Co. The unit is 25-ton capacities in material weighing 1000 lb. (per cubic foot.) and is built on four legs assembly for delivery per bottom with a



5 gal. of solution per acre may be applied with the tool bar or up to 50 gal. per acre may be applied with the boom attachment. Tank capacities of up to 200 gal. are available. Either pressure or non-pressure solutions may be used. Check No. 6313 on the coupon, clip and mail it to Croplife to obtain more complete details.

## No. 6312—Plastic Liner

A booklet concerning the various applications of "JaLiner"—a built-in plastic liner for steel containers—is now available from Jones & Laughlin Steel Corp. The booklet describes the construction features of the liner and the ways in which the polyethylene liner can solve "hard-to-package" problems as well as routine uses. Also listed is a partial guide to the application of polyethylene in liquid and chemical solutions. Secure the booklet by checking No. 6312 on the coupon and dropping it in the mail.

(not a sliding protective discharge gate) made of 12-gauge steel used for the inside and cover for the top with a company officials selling their customers storing ingredients on the coupon and dropping it in the mail.

## No. 6320—Films

United States Steel Corp. announces the release of four new films. They are "Barns for Better Dairying," "The Suspension Bridge," "The Waiting Harvest," and "Sinews of the South." The latter film is available only in certain southern states. All films are sound, most of them are in color and available in 16mm, a few in 35mm. Running times vary from 12 to 38 min. Secure more information about these and other films produced by United States Steel by checking No. 6320 on the coupon and mailing it.

## No. 6316—Bulletin

A new "Prentox Information Bulletin" has been published by Prentiss Drug & Chemical Co., Inc. It contains a suggested label outline for Prentox Pyronyl dust concentrate in combination with Rotenone and fungicides. Copies are available upon request. Check No. 6316 on the coupon and drop it in the mail.

## No. 6321—Portable Sprayer

A portable sprayer for such solutions as insecticides, fumigants, emulsions, deodorizing liquids, oils, polishes, floor dressings, moth proofers, and glass cleaners is now available from Spraying Systems Co. This new

sprayer was designed for use in commercial plants. The No. 6000 sprayer, as it is called, weighs 1 1/4 lb. and can be held and operated with one hand. It's supplied complete with unbreakable plastic jar that is easily refilled by unscrewing from the cap. A companion unit, the No. 5870 chlorine sprayer, is identical to No. 6000, except that all metal parts that come in contact with chlorine solutions are made of stainless steel. To secure more complete details check No. 6321 on the coupon and mail it.

## No. 6324—Fertilizer System

Now being demonstrated in various parts of the country is the new Flo-Mix system of fertilizing crops and pastureland. Organized to manu-

facture applying equipment, supply the basic fertilizer ingredients and to set up distributorships for Flo-Mix is the Flo-Mix Fertilizer Corp. The Flo-Mix principle is to mix the three essential ingredients—nitrogen, potash and phosphorus—on the applying equipment in the field as it is being applied into the ground. All ingredients are in their liquid form, utilizing anhydrous ammonia, phosphoric acid and potash. A setting of special dials regulates the mixture and determines the proportion of the various ingredients. The manufacturer notes numerous advantages of mixing a complete fertilizer in solution at the point of application and covers these points in an illustrated folder which is available to interested persons. The folder also describes the Flo-Mix equipment, including the

# Better Selling

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Nitri-Flo trailer tank, Phos-Flo and K-Flo tanks and applicators. For more complete information check No. 6324 on the coupon and drop it in the mail.

## No. 6323—Applicating Equipment

The line of anhydrous ammonia applying equipment offered by the Dempster Mill Manufacturing Co. is featured in a new descriptive folder produced by the company. The folder illustrates and describes the various models of Liquijectors and reveals considerable information on the new Dempster Liquijector metering pump. The several types of Liquijectors include those mounted on the new Dempster Model 500 tool carrier and

(Continued on page 13)

**Croplife**

**Here's another way  
LION IS HELPING YOU  
sell more Nitrogen Fertilizer**

**WALLACE'S FARMER Homestead**

**PRAIRIE FARMER**

**THE Missouri Farmer**

**The Progressive Farmer**

**Farm and Ranch**

**THE FARMER**

**Nebraska Farmer**

**WISCONSIN Agriculturist**

**Missouri Ruralist**

**WORLD'S LARGEST MANUFACTURER  
OF PRILLED AMMONIUM NITRATE**

**LION OIL**  
CHEMICAL SALES DIVISION

**Look To LION—A Leader in Petro-Chemicals—  
For Nitrogen Fertilizers**

Lion Anhydrous Ammonia • Lion Ammonium Nitrate Fertilizer • Lion Aqua Ammonia • Lion Nitrogen Fertilizer Solutions • Lion Sulphate of Ammonia

**DISTRICT SALES OFFICES:**  
NATIONAL BANK OF COMMERCE BUILDING, NEW ORLEANS, LOUISIANA  
SHEPHERD BUILDING, MONTGOMERY, ALABAMA



**COMPANY**  
EL DORADO, ARKANSAS

# Better Selling

Richer Sales Fields for Dealers

CROPLIFE, October 17, 1955



## Doing Business With

# Oscar & Pat



Will Thomsen, salesman for the Ace High Chemical Co., had spent quite a bit of time with Pat McGillicuddy at his desk, explaining his products and opportunities to sell them, and now he was ready to leave.

"Thanks for the order, Pat," said the tall, handsome salesman. "I know you'll sell a lot of our products, if you display and advertise them. So long, Oscar."

Oscar merely grunted. He had been scowling all the time Thomsen had been talking to Pat, and it was quite a long time, because Pat was never in a hurry to chase salesmen away.

Each time the salesman had suggested an additional line to buy, Oscar had winced, then swallowed hard. He envisioned the raid on the bank account when it came time to pay the bill. And the fact that Thomsen said the invoice would be discountable didn't make things look any brighter to Oscar.

When Thomsen went out the door, neither Oscar nor Pat said anything for several minutes. Each knew that another argument could burst forth about this buying episode, if either or both voiced their thoughts about what had occurred. Even Tillie Mason, the plumpish bookkeeper sensed the tension and reached for an ulcer powder to quiet a nervous stomach.

Then the door to the store opened again and Will Thomsen came back in, a sheepish look on his face. He was carrying a small piece of paper in his hand. "I'm sorry I did that,"

## Iowa Agronomists List Carryover of Fertilizer Nutrients

AMES, IOWA—Iowa State College agronomists figure the carryover of various fertilizer nutrients works out something like this:

When 40 or more pounds of nitrogen is used for corn, up to 25% of that nitrogen added on fine textured soils can be left for the crop next year. In dry seasons this carryover may be even greater. But on sandy soils there may be little or no residual effect from nitrogen the following year.

The carryover of phosphate plowed under or disked in for corn will range from 40 to 60%, depending on the rate of application and the soil conditions. Not much carryover can be expected when less than 40 lb. actual phosphate are applied per acre. But if 80 lb. phosphate per acre is applied the carryover can be upwards of 50%.

From one third to two thirds of potash can be left over for the next year, depending on the kind of soil and the crop. On silts and clays, a carryover will average about 30% if the crop is corn and stalks are taken off. It may be up to 60% if the stalks are left on the ground.

When small grains and legume-grass seedings are made the potash carryover will probably range around 40% when the straw is taken off and possibly up to 60% when it is left on the ground.

he said apologetically. "It won't happen again."

"Did what?" asked Pat.

Thomsen cast a look at the cold-faced Oscar who was figuring discounts, then the salesman handed the paper to Pat.

The partner read, "Salesmen Should Not Park in Customers' Parking Places."

Pat swallowed hard. "Oscar," he said, "did you write this?"

Oscar looked up impassively. "Sure I did. Why not?"

"Why not?" repeated Oscar. "I don't care even if the minister comes and parks right next to the entrance—he gets the same kind of note. That parking lot is for customers. Others can park down the street and walk."

"Why, Thomsen's a friend of ours," Pat said with anger. "You should never have put a note like that under his windshield wiper. Besides the parking lot is only half filled. There was room for him to park."

"I don't care if the parking lot was empty!" Oscar roared. "That space is for customers."

"Oh, it's really all right, fellows," said the salesman, worriedly. "I was wrong. I know it. Let's forget it."

They didn't even hear him, and so he left without saying goodbye again, got into his car and drove off. "Whew," he said, "how can they quarrel like that all the time? That Oscar."

"Now, Oscar," Pat was saying. "You have insulted Will Thomsen and hurt his feelings. That's no way to handle people. If you feel so strongly about the parking lot, we could put up a sign, 'Customer Parking Only.' That would give salesmen the meaning in a nicer way."

"I never beat around the bush!" Oscar said coldly. "I always call a spade a spade."

"But that's a mighty expensive privilege to do that, when you are in business. You'll lose customers that way. And customers are not easy to get."

"Huh," snapped Oscar. "Salesmen are not customers. They only want to sell to us. We didn't ask him to come here and park in our lot. That's only for people who buy from us."

Pat counted to ten, just as Nora, his wife had told him to when Oscar was involved. In fact, this was the third time today he had counted to ten. "So that's the way you look at it. Well, Oscar, a good salesman is just as important to us as a good customer."

"Now you are crazy," Oscar taunted.

"Every reliable salesman who comes to call on us is doing us a favor," Pat said. "If it weren't for salesmen who visit us and explain merchandise and its use to us, we wouldn't have anything to sell."

"Huh, from the looks of this store and basement and warehouse, we ain't short on stuff to sell," Oscar snapped. "If I had my way, we wouldn't buy anything else for six months at least."

"Those salesmen give us selling ideas and so help us to sell, and then

we make a profit," Pat said seriously. "They are entitled to a fair hearing, and also courtesy. They are really our partners in a way in this business."

"For some people you've got to lay it right on the line," Oscar said sharply. "That includes salesmen and delinquent customers. Remember, it's always our money that is involved—not theirs. We have to pay the bills."

"Sure we pay the bills," Pat said, "but the salesmen and the customers, delinquent or not, help us make the money. We can't stand by ourselves in this world. We all live together."

"Just so long as those people don't live on us," growled Oscar, fiddling with a sharp pencil. "You are too easy with people, Pat. You are so afraid of hurting people's feelings. Well—I'm afraid of hurting my money. I'm gonna watch it every minute of the day—remember that."

"So, I'm afraid of hurting people's feelings, eh?" mused Pat soberly. "Well, maybe I am, but I'm not sorry about that. And since you've told me what you think of me, do you want to hear what I think of you?"

"You bet I do!" challenged Oscar. "What?"

Pat stared at his partner, a thoughtful look in his eyes. Then he got to his feet. "No, on second thought I don't think I will. It might—"

At this juncture Tillie Mason had a rare inspiration. "Gentlemen," she called cheerily from her desk, "I've just finished the monthly statement. We made one percent more net profit this month than last."

Pat looked at Oscar and grinned, and Oscar's hard lines relaxed about one half of one per cent. "That's a good statement, Oscar," said the genial Irishman. "Suppose we table what we think of each other for another month."

## Magazine Describes Dutch Elm Disease Fight

DETROIT—The story of how many Michigan townships are fighting the Dutch elm disease is told in the September issue of "Official Michigan," the publication of the Michigan Townships Assn.

The title of the article, used with a photo of a shade-tree spraying machine is "Tragedy of the Elms."

The magazine reports that in many townships throughout the state, battles are being waged by officials, by township, county and city employees, and by private citizens to save the elms.

The situation last year in Detroit is cited where the "disease destroyed at least 1,200 trees valued at a quarter of a million dollars."

The help of private citizens also is sought by the magazine. "Official Michigan" points out "citizens can help this fight to save the trees by spraying the elms in their yards and other places on their premises. The readers are urged to watch for the first sign of the disease—the wilting of the topmost leaves and branches."

## WHAT'S NEW

(Continued from page 11)

those which can be tractor-mounted. The simplicity of the dial setting, ease of lubrication are claimed to be two major features of the new metering pump. Completely visible and accessible from the outside, the dial can be quickly set without tools. All lubrication points are easily reached. The problem of remote control equipment on the meter has been eliminated by the use of a simple on-clutch system, the literature explains. For a copy of the new booklet and other information check No. 6323 on the coupon and mail it to Croplife.

## No. 6317—Liming Slide Rule

A slide rule has been devised by the La Motte Chemical Products Co. that can give the liming requirements for any plant, flower, tree, shrub, vegetable or farm crop grown in any type of soil. The plant group slide is positioned opposite the soil acid reading and the amount of lime required for the best growing conditions is read directly from the scale. All requirements for alkaline soils are also given. The rule has separate scales for small areas and for farm operations. A free brochure on the soil reaction slide rule is available. Check No. 6317 on the coupon and mail it to secure the brochure.

## No. 6319—Scale

A new type automatic scale which is claimed to weigh sticky and non-free flowing materials as accurately as dry aggregate materials, has been announced by Richardson Scale Co. A differential scale, the new unit automatically and continuously delivers a selected amount of material, the weight of which is the difference between a fully loaded and partially loaded scale. Called a weigh-in and weigh-out scale, the new unit is made up of a weigher, dial scale and totalizer. The weigher, consisting of a weigh hopper mounted on a short belt conveyor, is suspended from levers terminating in the dial scale. The belt conveyor provides a live-bottom for the weigh hopper, and facilitates the discharge of the hard-to-handle material. Heart of the system is the electronic controls. Secure more details by checking No. 6319 on the coupon and mailing it.

## No. 6314—Sales Aids

Available from the Velsicol Co. are three merchandising aids for household and garden insect control with chlordane. They are: Four color, true-to-life pictures of an ant, carpet beetle, chigger, clothes moth, silverfish, spider, mosquito, roach and white grub (Japanese beetle larvae) designed for store display; a 12-page chlordane garden booklet with tips on garden practices; and a 16-page booklet entitled the Chlordane Household Insect Folder, which points out the key "kill zone" points in the home and how to apply the product. The merchandising aids may be obtained without charge by checking No. 6314 on the coupon, clipping and mailing it to Croplife.

## LEASE FORMS AVAILABLE

LAFAYETTE, IND.—Eight different lease forms are available from the Purdue University Agriculture Economics Department for Indiana farm tenants and landlords.

## HEADS DEPARTMENT

AMHERST, MASS.—Julian M. Fore, Birmingham, Mich., has been appointed head of the agricultural engineering department, University of Massachusetts.

AT'S NEW  
ued from page 11)

can be tractor-mounted. The dial setting of the dial setting of the new meter are claimed to be completely visible and the outside, the dial without tools. All parts are easily reached by remote control equipment. The meter has been eliminated by use of a simple on/off switch. The literature explains the use of the new booklet. For further information check No. 6323 and mail it to CropLife.

#### —Liming rule

A new liming rule has been devised by Chemical Products Co. It provides a liming requirement for flower, tree, shrub and farm crop grown in a specific plant group slide. It also provides the soil acidity and the amount of lime required for best growing conditions from the scale. Also for alkaline soils a separate rule has been provided for areas and for farms. A free brochure on the new rule is available on the coupon and the brochure.

#### —Scale

An automatic scale which weighs sticky and non-materials as accurately as materials, has been developed by Richardson Scale Co. The scale, the new unit, is continuously determined by the amount of material which is the difference between the total loaded and partial weight. The new unit is made of a dial scale and totalizer, consisting of a unit mounted on a short beam suspended from lever in the dial scale. This provides a live-bottom hopper, and facilitates the hard-to-handle materials. Secure more details by checking No. 6319 on the coupon and mailing it.

#### Sales Aids

The Velsicol Corp. has developed a number of aids for garden insect control. They are: Four pictures of an ant, a caterpillar, clothes moth, mosquito, roach and Japanese beetle larvae; a display; a 12-page booklet with tips; and a 16-page Chlordane Housekeeper, which points out the points in the home for the product. These may be obtained by checking No. 6310 on the coupon and mailing it.

**S AVAILABLE**  
IND.—Eight different types are available from the University Agricultural Experiment Station for Indiana landlords.

**PARTMENT**  
SS. — Julian M. Mich., has been the agricultural extension agent, University

# Aiming at bigger profits?

Then take a long, hard look at this important farm chemical trademark!

# MONSANTO

®

**Bigest money-making news in years! Read how this famous trademark can push your sales curve up! Turn page for complete details.**

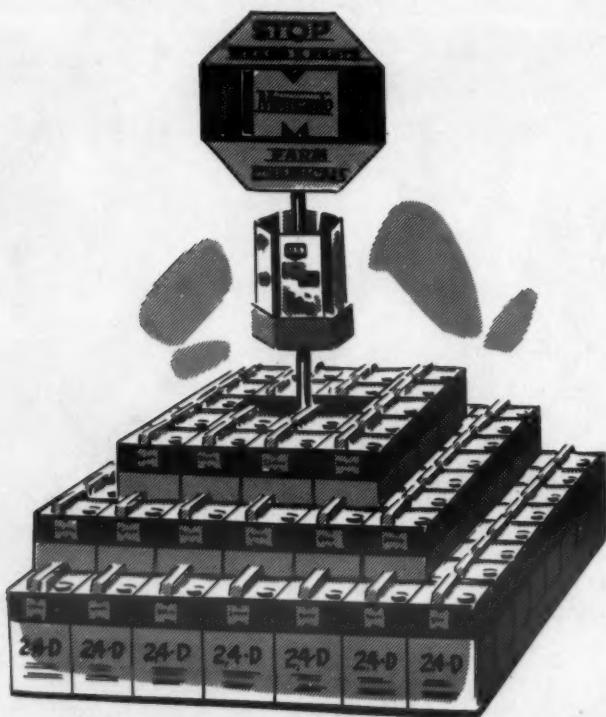


# Now... a complete line of money- Weed Killers, Brush Killers, backed by a smashing 8-way

This is a *broad line* of herbicides and insecticides, made and *field-tested* by Monsanto—world-known for products created from the wonders of chemistry.

And with the Monsanto line, comes a powerful promotion program to help you make more by selling more... a promotion unequalled by any other farm chemical manufacturer.

Read over the details of this big 8-way program, then ask yourself if any other manufacturer gives you such hard-hitting, profit-producing backing for selling farm chemicals!



## 1 A COMPLETE SELF-MERCHANDISING UNIT FOR YOUR STORE

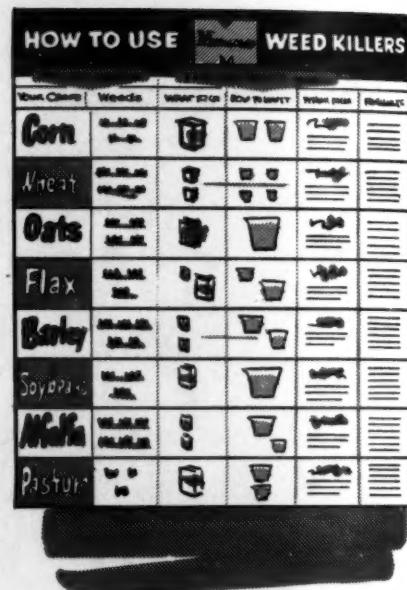
This all-in-one unit "STOPs" prospects, displays the product, distributes literature. Dominant, colorful, unlike anything now available to you in this field. Simple to set up, rugged and strong. A *complete* extra store salesman to attract attention and bring in more farm chemical dollars for you.

**And remember...**

You get it only with the Monsanto line!

## 2 JUMBO PICTURE AND DIAGRAM WALL CHART

A double feature! Use it as a wall chart in your store, send it home with your customer for a barn-door chart. A real service item. In simple, easy-to-understand pictures and diagrams, it recommends how, when, why and where to use Monsanto weed killers. Takes the mystery out, puts the common sense in!



**And remember...**

You get it only with the Monsanto line!



## 3 PACKAGED DIRECT-MAIL PROGRAM

Complete down to the last word. Professionally written, expertly illustrated mailing pieces that are guaranteed to put over the advantages of farm chemicals to farmers... and to bring those farmers into *your* store to buy. All you do is address these mailing pieces to your own best prospects.

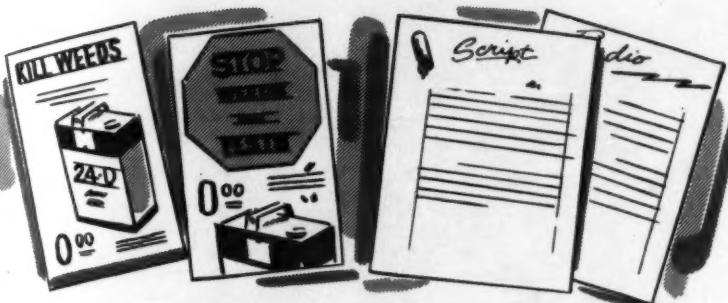
**And remember...**

You get them only with the Monsanto line.

# ...makers in farm chemicals . . .

## Insecticides —

## promotion program!

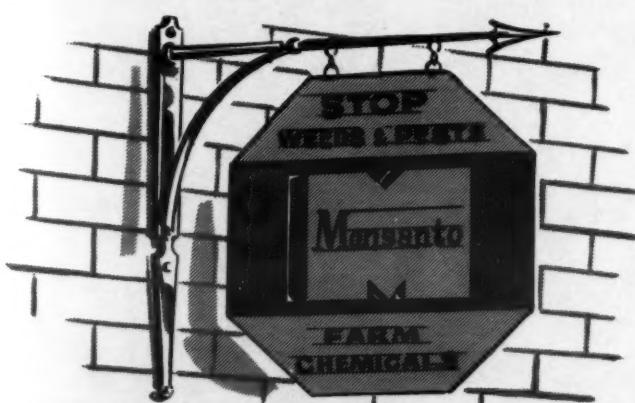


### 4 NEWSPAPER MATS AND RADIO SCRIPTS

Ready to use. No work for you. You need only insert the name of your store in the mat or the script and a timely, interesting message goes to your prospects . . . in your own selling area . . . in your name!

**And remember . . .**

You get them only with the Monsanto line!



### 5 OUTSIDE METAL STORE SIGN

A "STOPPER" for sure. This versatile attention-getter can serve you well. Use it outside (or inside if you prefer), with your store name or with lists of products you feature.

**And remember . . .**

You get it only with the Monsanto line!



### 6 GIANT STORE POSTER

In bright, brilliant day-glo inks, this king-sized banner in your store will flash a day-after-day message that can't be

missed. Use it over a wire hanger (it's printed two sides for double impact), use it as a wall poster, use it as a window streamer. Any way, it tells the world you sell and recommend the Monsanto line!

**And remember . . .**

You get it only with the Monsanto line!



### 7 PRACTICAL, USABLE LITERATURE

No long words or jaw-breaker phrases. These are simple, easy-to-read pamphlets and booklets about Monsanto farm chemicals—and about how to use them for best results and bigger crop profits. Completely different from anything you've seen before—more pictures, more illustrations, more *readable* information than anything now available.

**And remember . . .**

You get them only with the Monsanto line!

### 8 There's MORE, too!

These 7 features are only the beginning. In addition, there's consistent, hard-hitting *advertising* by Monsanto—in your own state farm papers and in the regional farm magazines that are read right in your own back yard. Here's consumer advertising where you can use it . . . where it's of benefit to you!

**And remember . . .**

You get it only with the Monsanto line!

# Attention distributors:

Here's a great opportunity for aggressive bona-fide distributors who are on the alert for profitable new business.

Monsanto is a leader, a world-recognized leader in the field of chemistry. This complete line of farm chemicals inaugurates Monsanto's long-range, full-scale program in agriculture.

The pages you have just read give you a capsule idea of the tremendous merchandising program Monsanto is planning to put behind their line of farm chemicals.

And yet, that only tells a few of the advantages of the Monsanto line to you as a distributor. There are these, too—

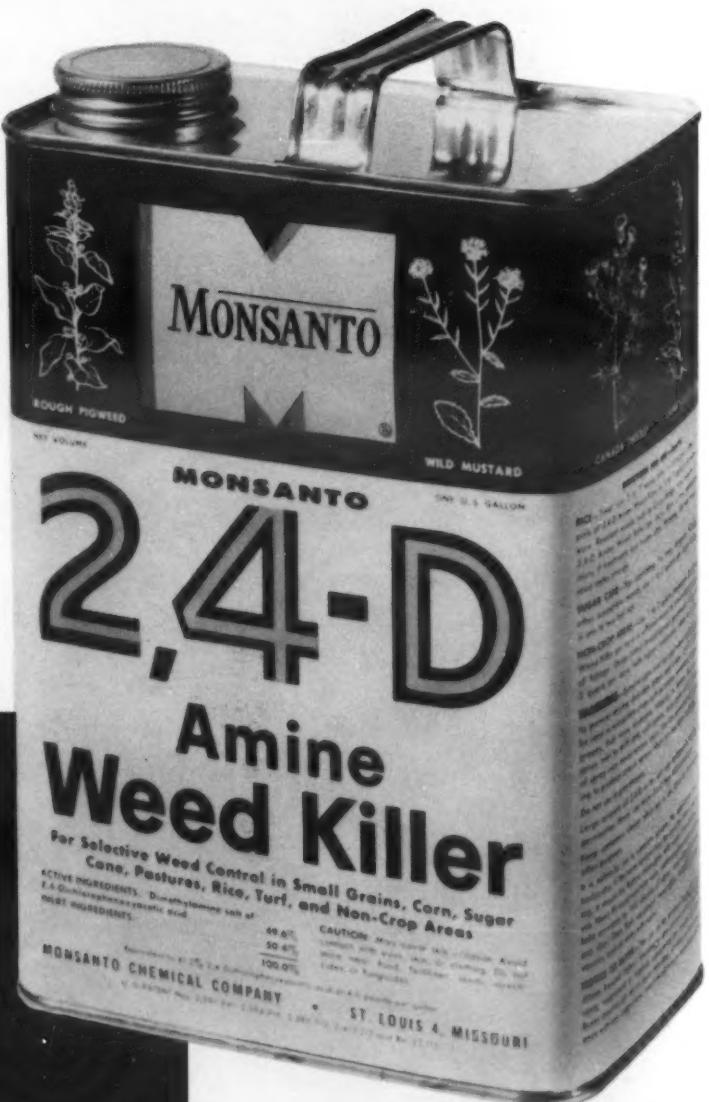
- ADVANTAGE 1** A complete kit showing the actual mechanics of the dealers-promotion described on the preceding pages.
- ADVANTAGE 2** An interesting incentive plan.
- ADVANTAGE 3** Educational programs for your dealers, completely operated and programmed by Monsanto.
- ADVANTAGE 4** A simple, easy-to-use catalog.
- ADVANTAGE 5** A complete supply of direct-mail material to be sent to you, the distributor (for your dealers), on this new line of farm chemicals.

*And most important, a realistic approach that will give you all the things you want on ordering, pricing, service and contracts. A program that will give you the protection and stability which you as a reputable distributor have always desired in the field of farm chemicals.*

**MIDWEST DISTRIBUTORS:** Let our salesmen tell you how you can become a part of this program.

For complete information phone, write or wire Farm Products Section, MONSANTO CHEMICAL COMPANY, 800 North 12th Boulevard, St. Louis 1, Mo.

**Where Creative Chemistry Works Wonders For You**



TYPICAL EYE-CATCHING PACKAGE



## FARM SERVICE DATA

Extension Station Reports

A good supply of magnesium helps grow good crops, says O. T. Coleman, extension soils specialist at the University of Missouri.

The mineral helps plant growth in number of ways. It promotes early and uniform growth by helping the plant make better use of other plant foods. And, it helps carry phosphorus to the growing and fruiting parts of the plant.

Magnesium aids seed development, the specialist says. It promotes the formation of protein and oils in crops, stimulates growth of soil bacteria, and aids legumes in fixing nitrogen. This action increases a plant's resistance to disease.

Also, magnesium is an important part of chlorophyll—the green coloring matter of plants. A lack of the mineral causes loss of green coloring matter between veins in the leaves.

Brush and woody growth in fence rows and along ditch banks can be destroyed by spraying, according to the botany and plant pathology department at Purdue University. A mixture of equal parts of 2,4-D and 4,5-T should be diluted with water. One gallon of the mixture in 100 gallons of water should be used.

Fertilizer can save legume pastures. The expense of often reseeding legume and legume grass pastures can be saved if these pastures receive regular top dressings of phosphate and potash fertilizer.

Results of research at the University of Minnesota show these plant nutrients will lengthen the life of alfalfa and other legumes. This means it is not necessary to reseed the legumes so often.

Although legumes and grasses can be soil-builders by supplying more "available" nitrogen and from building organic matter, they can also be "soil-robbing" if pasture and hay crops are taken from these fields year after year without replacing the phosphate and potash they take out. According to a University of Minnesota extension soils specialist, Charles J. Simkins, a three-ton crop of alfalfa will use 35 lb. available phosphate and 135 lb. potash.

Many legume pastures are lost each year because of lack of available potash to carry them through the winter and spring months, Mr. Simkins says. Many pastures which actually do not lose their stands of legumes are weakened so much that grass will take over in the pasture.

Corn fields today are a good deal like feedlots to which we must carry fertilizer to fatten the plants, according to Dr. W. A. Albrecht, head of the soils department of the University of Missouri.

In early times, says Dr. Albrecht, farmers could keep going West to find virgin fertility out of new soils to grow more corn. But now, he says, our fields are no longer the equivalent of open pasture for our crops, where seeds are turned out in the spring to rustle for themselves like birds on the range.

Bigger and better corn crops are not a matter of more and newer seeds, Dr. Albrecht emphasizes. Top yields today, he says, are the result

of wise soil management that guarantees of good balance of plant nutrition. Summing up, he says, "There is no food-creating substitute for a fertile soil."



"If it pays to plant winter wheat, it pays to fertilize it," according to M. D. Weldon, University of Nebraska extension agronomist.

Mr. Weldon says that even though less moisture than usual is stored in the summer fallow regions this fall, "fertilizing wheat as usual is a better bet than planting wheat without fertilizer."

As an example of how plant food pays off, Mr. Weldon cites the fact that fertilized wheat yielded 13 more bushels per acre than unfertilized wheat in tests during a 1952-53 drought. The ground was so dry that half the wheat failed to come up in the fall and didn't emerge until the following February.

Yields from the fertilized fields averaged 26 bu. wheat per acre, compared to only 13 bu. on plots with no fertilizer.



Purdue University soils men report that corn yields have been increased up to 22 bu. per acre by loosening subsoil to a 20-inch depth and adding complete fertilizer to it.

By this method, the plant roots are encouraged to penetrate deeper into the ground and make use of moisture reserves in the sub-soil.

Helmut Kohnke and A. R. Bertrand of the Purdue agronomy staff, report that the best time to loosen the subsoil is in the late summer or early fall, in preparation for planting corn the next spring. In the fall subsoils are usually dry and shatter more easily. The fertilizer is applied in a vertical band from the plow sole to the lowest depth of the operation.

The Purdue agronomists point out that loosening the subsoil is particularly helpful in maintaining corn yields in years when rainfall is scarce. In such years, the soil moisture in the Corn Belt is often not sufficient to give maximum yields. The crop roots often do not penetrate deep enough to make use of subsoil moisture.

When fertilizer is placed in loosened subsoil, the plant roots will concentrate in the grooves thus formed, the agronomists say. Root growth then is thicker in the subsoil. Living and decaying roots provide organic matter that helps keep the soil loose and porous and improves its physical condition. More water accumulates in the subsoil because of the open grooves and is saved for crop use, instead of running off.



Phosphorus is needed to grow more wheat on the lands of western Oklahoma, report Oklahoma A&M college agronomists Harold V. Eck and Bobby Stewart, summarizing four years of fertilization tests.

They said the lack of phosphorus is the most serious fertilization problem, because without it, nitrogen fertilizer, which also is needed on many of the soils, can't be fully effective.

Phosphorus fertilizer gave good results at three of the 11 locations where tests were being carried on in 1954. In other years, there was much better response to phosphorus. Twenty

to 50 pounds of phosphorus per acre was the amount needed for good response on the checked plots.

The agronomists found that when phosphorus is applied and other conditions are right, nitrogen fertilization is profitable.

Nitrogen fertilizer gave good increases over unfertilized plots at four of the 11 locations. Yields increased with applications of nitrogen at 20 to 80 lb. per acre, and the best ratio of gain was at 20 lb. At this rate, 4.7 pounds of nitrogen were needed to produce each extra bushel of grain.

The protein content of the wheat was boosted by the use of nitrogen, but phosphorus didn't increase the amount of protein.



Lawn grasses will remain green longer in the fall and grow off earlier next spring if given an application of a complete fertilizer at least 30 days before the first expected hard freeze, according to E. M. Trew, Texas extension agronomist.

The specialist recommends a fertilizer of the 2-1-1 or 1-1-1 ratio. Application should be made at a rate to supply two pounds of actual nitrogen per 1,000 sq. ft. of lawn. He adds that some soils do not need potash but since the cost is small, it is good insurance and may give excellent results.

## Corn Weed Control Shown at Field Days

EAST LANSING, MICH. — The proper use of 2,4-D to aid in corn production was illustrated at the "Corn Field Days" held this fall by Michigan State University at Milan, Hudsonville and Corunna.

Once again, farmers had proof that the Michigan State University experimental use of 2,4-D plus cultivation has given better weed control and higher corn yields than cultivation alone. This is the sixth year that the University has obtained the best results with ester form of 2,4-D, as a pre-emergence spray at the rate of one pound of actual material per acre.

Michigan State farm crops specialists insist that the first cultivation can be skipped if the pre-emergence spray is used. They term the spray good insurance against weeds getting out of hand in the wet summer.

### CELEBRATING ANNIVERSARY

HARTSVILLE, S.C. — The J. L. Coker Co., parent firm of the Coker's Pedigreed Seed Co., is celebrating its 90th anniversary this month. Pioneering work in cotton breeding was begun in 1904 by David R. Coker, associated with his father in the company. Subsequently, the seed breeding business was set up as a separate corporation.

## SHOP TALK



### OVER THE COUNTER

### FOR THE DEALER

By EMMET J. HOFFMAN

Croplife Merchandising Editor

#### Why does a farmer use fertilizer?

Four reasons, and of these only one is vital, states an introductory chapter of an informative little handbook which was prepared for those engaged in selling fertilizers, farmers and laymen in general by Vincent Sauchelli, director of agricultural research, Davison Chemical Co., Division of W. R. Grace & Co.

The four reasons, Mr. Sauchelli says, are:

"1. To start the crop. A good start in growth will help mature the crop earlier; in areas where frost comes in the first part of Autumn, early maturity is insurance against loss.

"2. To ripen the crop. Fertilizer performs a real service in hastening full development of the harvest.

"3. To maintain soil fertility. Fertilizers give back to the soil the plant food elements removed by the crops. Hence, fertilizers can be used to maintain fertility and increase productivity of the soil.

"4. For profit. This is the compelling reason why the farmer uses fertilizers. Unless the early start or the earlier ripening means more crop, he cannot afford to use it."

"The early ripening and better quality of the fertilized crop produces the money with which a farmer can pay for the fertilizer and have some to spare; otherwise he cannot afford to use it. Unless in the process of maintaining soil fertility, he also increases the yield sufficiently to pay for the fertilizer and still have an excess over costs, he cannot be expected to apply fertilizer to his soils in amounts which will produce profit.

"The farmer trades harvests for fertilizer—if wheat is worth, say \$1.50 bu. and he uses 400 lb. 3-12-6 fertilizer, it may take 6 bu. to pay for the fertilizer. The fertilizer produces, let us say, an extra 15 bu., giving the farmer a gross profit of 9 bu., at \$1.50 bu., \$13.50 per acre.

"Chemical fertilizers are an indis-

pensable aid in reducing the crop unit cost of production and thereby increasing farm cash income. Chemical fertilizers supply plant nutrient essential directly to the growth and development of crops and indirectly to the maintenance of livestock and the sustenance of Man.

"Chemical fertilizers in effect are equivalent to extra hectares of land. For example, the extra crop yields produced in the U.S. by 23 million tons of fertilizer in 1953 were equivalent to the yields from about 30 to 50 million hectares of land without applied fertilizers."

#### Sales Argument

Dealers can take advantage of Mr. Sauchelli's reasoning and turn it into a valuable sales device, either when talking to a prospect in person or through the media of store, press or radio advertising.

In fact, the complete handbook, entitled "Soils, Phosphates and Mixed Fertilizers," is an excellent source of essential, practical information on the feeding of soils and crops and is written in clear, understandable language. For those who may want a copy, details of how one can be obtained will be found in the "What's New" department which begins on page 10 of this issue.

## Wisconsin Firm Finds Diversification Pays

By AL. P. NELSON

This is supposed to be the age of specialization, but Harold and Ed Rindfleisch, who own Rindfleisch Feed Mill & Hatchery, Jefferson, Wis., do not believe it.

These hard-working, enterprising brothers have developed a diversified and profitable farm supply business which takes care of many of the needs of farmers in this rich agricultural and dairy region.

And, what is still more interesting, the business is still expanding. Take a look at the list of activities these brothers are engaged in and see how many services are represented. They operate a hatchery; operate a feed mill and store at Jefferson; operate a 150 acre Leghorn laying farm; buy and sell eggs; operate a branch feed store at Watertown, Wis.; sell dry fertilizer and anhydrous ammonia; sell farm chemicals and arrange for spray service; sell steel buildings for farms and industries; sell poultry and barn equipment, ventilating equipment, corn cribs, etc.; operate a mobile unit grinding and feed mixing service in a wide trade area. (This latter service added late in 1954.)

This list covers a wide range of service to farmers and is one reason why this firm is kept busy most of the time. There are enough services and products offered—some of them seasonal—so that practically every month of the year the brothers are able to hang up a good sales record. They say, too, that a lot of lines and services keeps them alert at all times and stimulates them to greater effort.

Always alert to new merchandising opportunities, the Rindfleisch brothers watched the rise in the use of liquid fertilizer very carefully. Last year they purchased a 2,000 gallon transportation unit, and began to haul anhydrous ammonia from Janesville, Wis., some 40 miles away. Four applicators in the area are now buying their ammonia fertilizer from Rindfleisch brothers and the volume of business is growing.

Harold Rindfleisch states that last year many farmers used anhydrous ammonia fertilizer on from 4 to 10 acres as a test. So well satisfied were many farmers with the use of this new type of fertilizer that this year they placed orders for fertilizing 40 to 50 acres. These same farmers, Mr. Rindfleisch reports, also bought more dry fertilizer, as a result of their increased interest in fertilization.

Within the next year, the Rindfleisch firm will build its own storage capacity for anhydrous ammonia. "We think there is going to be much greater use of this type of fertilizer for side dressing corn in the Wisconsin area," says Harold Rindfleisch, "and we want to be in on the ground floor. Our state farmers are proving that they can raise big crops of corn with the proper attention paid to fertilization."

Along with the interest in fertilization, comes the need for weed control. The Rindfleisch brothers are pushing the use of insecticides and weed controls. They have made arrangements with weed spraying concerns to handle custom work through the store this year.

Farmers in this region of the state appear to be behind other farmers in purchasing and using sprayers, thus custom service has a promising future here for the time being, the brothers believe.

In selling weed control measures, the Rindfleisch brothers play up the fact that this saves farmers extra cultivations. And with the cost of farm labor being quite high, this appeal makes sense to many economy minded farmers.

Harold Rindfleisch has charge of the firm's steel building sales program. He sells such buildings to farmers and industrial firms. At the present time, industry is purchasing more of these buildings than farmers.

Two years ago, the reverse was the case. Farmers at that time had a higher annual income, and were anxious to buy and erect steel buildings to protect expensive farm machinery and to provide other needed storage.

For the moment, however, since farm income is down, farmers are spending most of their money trying to diversify and to also increase their annual farm income. They are letting housing and storage needs wait until higher income years.

Industry on the other hand, is prospering and has need of such steel buildings for expansion and storage.

### High Wheat Yields Reported in Illinois Experiment Fields

URBANA, ILL.—The 1955 wheat yields were unusually good on University of Illinois soil experiment fields, says L. B. Miller, University agronomist.

The average of 20 scattered fields was about 25 bu. without soil treatment and 46 with treatment and crop rotation. These fields include 12 in the dark soil area, the sand field at Oquawka and seven fields on light colored soils of southern Illinois.

The greatest extremes in response were on fields of gray prairie soil in south-central Illinois, according to Mr. Miller. At Brownstown in Fayette County yields ranged from a low of 1.5 bu. on untreated soil to nearly 60 bu. on a field under full treatment.

At Toledo in Cumberland County the range was 10 to 64 bu. Saline was grown at Brownstown and the new variety Knox at Toledo. The treated fields got lime, phosphate and potash in a rotation of corn, soybeans, wheat and mixed legume hay.

On several of the dark soil fields, wheat growth was rank this season, Mr. Miller says. As a result, early lodging cut yields on highly fertile plots, especially in areas where drought hit in 1954.

Plant food that would have been used by the growing crop or leached from the soil in 1954 accumulated and caused unusually early growth of the wheat in 1955, he says.

Cooperative plots used in a special phosphate experiment show the difference in wheat yields between the two seasons, points out Mr. Miller. Three plots were in southern Illinois and one near Urbana on soils that were deficient in phosphorus.

Without phosphates the average yield in the four locations was 25 bu. in 1954 and 40 bu. in 1955. With phosphorus the yields were 44 bu. in 1954 and 55 bu. in 1955. Phosphates therefore increased yields 75% in 1954 and 37% in 1955.

All plots in these cooperative tests were well supplied with lime, potash and nitrogen, Mr. Miller reported.

## What's Been Happening?

This column, a review of news reported in Crolife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

In its annual fertilizer situation report the U.S. Department of Agriculture estimated that supplies of the three principal plant nutrients in 1956 would exceed the 1954-55 supply by 2.5%. USDA made these estimates 2.35 million tons of nitrogen, 4.4% more than the 2.25 million tons in 1954; 2.3 million tons of available phosphoric acid, little change; 1.94 million K<sub>2</sub>O, an increase of 4.3% over the 1.86 million tons a year ago.

Lamar Ratliff, 16-year-old Mississippi 4-H clubber, raised an official yield of 304 bu. an acre on his corn plot.

Traffic experts in the fertilizer field said that the new rates announced by Interstate Commerce Commission on trainloads of commodities from shipper to a single consignee, will not likely apply to fertilizer. However, it was regarded as a "foot in the door" which might lead to better rates in future.

Food and Drug Administration used its five-man advisory board to establish a tolerance of one part per million on U.S. Rubber's Naugatuck Division pesticide, Aramite. This was the first time the committee had been called into play. . . . The American Potash Institute, Washington, D.C., observed its 20th anniversary. It was launched in 1935.

Agricultural losses suffered during the August floods in Connecticut, Pennsylvania and New Jersey totalled \$5 million, it was announced. One damage was the largest single item, being figured at \$2.8 million.

New appointees to industry positions included John E. Fletcher L. Ralph Boynton who were promoted to new sales posts by U.S. Potash Co.; Robert J. Engelhardt, who was named vice president for J. C. Campbell Corp.; John W. Crowther, promoted by Frontier Chemical Co.; and Laura S. Rockefeller was named to the board of Olin Mathieson Chemical Co.

The Federal Food and Drug Administration increased fees for the setting of tolerances for pesticidal chemicals, stating that the former charges did not pay their way. In some categories, the fees were doubled. . . . Stauffer Chemical Co. announced plans to merge with Consolidated Chemical Industries, Inc.

An Indian fertilizer firm, Fertilizers & Chemicals, Ltd., Travancore, India, called for tenders for the supply of manufacturing equipment. Cost of the proposed new plant is \$6 million. . . . California Spray Chemical Corp., Richmond, Cal., announced that it will build a \$1.5 million captan plant in France. Production is scheduled for the fall of 1956.

The Corn Belt Agricultural Ammonia Conference, held at Urbana, Ill., was told that full fertilization could add a billion bushels to midwest corn production. Some 700 persons registered for the meeting.

The Interstate Commerce Commission, in granting train load rates for bulk commodities when shipped by a single shipper to a single consignee, raised speculation in the fertilizer trade as to whether this principle might be applied to the plant food shipments.

Dr. G. L. Bridger, formerly of Iowa State College, has joined the Davis Chemical Division of W. R. Grace & Co. as director of agricultural research. . . . Kenneth A. Keith was named to a new position by Spencer Chemical Co. Formerly connected with the sales department and a market analyst, Keith was made manager of agricultural chemicals market research.

Southern Nitrogen Co., Inc., a newly organized firm, announced it would build a \$14 million nitrogen plant at Savannah, Ga. Officers of the company include Malcolm Smith, chairman of the board, John R. Riley, president, and George V. Taylor, vice president.

Western States Chemical Corp. will begin manufacture of compressed fertilizers in a new plant now under construction at Nichols, Okla. The company has been organized as a subsidiary jointly owned by Pacific Guano Co., Berkeley, Cal., Triangle Company of Central California, Salinas, Cal., and Wilbur-Ellis Co., San Francisco.

Monsanto Chemical Co., St. Louis, announced a special sales staff will use its Organic Chemicals Division to market farm chemicals which the company will market for the first time under its own label in 15 Midwest states. Charles P. Zorsch, associate manager of the division's Agricultural Chemicals Dept., heads up the new farm chemicals section within his department.

National Agricultural Chemicals Assn. registrants for the group's meeting at Spring Lake, N.J., were told that more industry statistics and market facts are needed. W. W. Allen, reelected president of the association, said that well may take 100% more chemicals to produce the 40% more food that U.S. will require to feed its expanding population in the next 20 years.

Flood damage in the northeastern states was calculated in billions. Hurricane "Diane" brought winds and rains that ruined crops, killed livestock and devastated whole areas of New England. Flood insurance was reported to be practically non-existent, thus adding to the difficulties of both farmers and businessmen. . . . A European chafer quarantine was applied to include parts of Connecticut, New York and West Virginia. . . . Grace Chemical Co. named John B. Fitner as head of its Agricultural Service Dept.

According to a report by the U.S. Bureau of Mines, the phosphate industry faces a good future in both demand and output potentials. A continuing rise in use has been noted for many years. . . . The American Society of Agronomy met at Davis, Calif., Aug. 15-19 and heard many papers on crop and soil research. New president elected was Dr. Iver Johnson, Iowa State College.

FAMILY

## Monthly Bulletin Helps Build Sales for Minnesota Retailer

The Blue Earth County Service Co., stores at Mankato and Amboy, finds that the issuance of a monthly bulletin, entitled the "Family," helps greatly in eliminating fertilizer and farm chemical information to its prospects and customers. Joe Nemes, manager of the Mankato store, reports that the firm issues about 6,000 of these bulletins monthly between the two locations.

Some farmers tell Mr. Nemes that they save the monthly issues and find them excellent for reference.

The bulletin is excellent for reminding farmers monthly of their current fertilizer requirements and the need for placing orders in time to get sufficient amounts. For example, a recent bulletin said:

Another month has passed unceasingly fast and lack of time has prevented many of you from top dressing your alfalfa after the first cutting. Let's feed those alfalfa plants plenty of phosphate and potassium, 2 to 300 lb. 9-30-30, in order that they may develop better root systems and build more nitrogen for future cuttings. Remember this is your cheapest method of getting an additional supply of nitrogen into the soil and eliminate costly protein feeds by increasing hay yields and protein content. Our machines are waiting for your call."

Agricultural chemicals also get a play in the firm's extensive direct mail. In so small a field as mosquito spraying is not neglected. Copy in a recent ad says, "Farm chemicals, indeed. Mosquitoes are terrific in the season. Are you planning a yard spraying of some sort? The answer is yes. Then why not spray your lawn and farm yard with DDT? Merely three quarts of DDT, 25% emulsion in 10 to 20 gallons of water and spray. One word of caution—do not apply an excess amount on shrubs and ornamentals. Oil may have a damaging effect."

The Blue Earth County Service Co., too, offers a soil testing service for customers. The firm has its own soil testing laboratory at Amboy where customers may bring in soil samples. The charge for this service is 50¢ per sample. Many farmers take advantage of this service, reports Mr. Nemes.

The Mankato firm does fertilizer spreading. It has two truck spreaders and two pole type spreaders. Mr. Nemes reports that for alfalfa the most popular type of fertilizer appears to be 30-30-30 while for corn it is 10-10-10 and 6-28-25-12.

The firm charges 60¢ an acre for spreading fertilizer while there is a \$0 to \$4.50 per ton charge for spreading lime.

Many farmers in the area are interested in a new type of corn planter put on the market, Mr. Nemes reports, which has a deep and shallow fertilizer attachment. Some farmers, too, are interested in a new type of end gate pellet fertilizer spreading attachment.

The Blue Earth company also sells farm sprayers. A boom type sprayer \$150 is much in demand, and the company also sells a spray nozzle for around \$100. Mr. Nemes believes the Blue Earth firm has the best stock of sprayers in the entire area. The company also sells many chemicals, especially weed

The company does its share to advise farmers to place their fertilizer orders early so that rural patrons can get enough of the kind of fertilizer they wish, and have it properly cured. For example, a recent item in the firm's bulletin on this score said:

"Friends, we urge you to order your fertilizer now. We have room for about 17 cars of fertilizer in storage, but already over half of this has been spoken for; and remember

this—the material we have in storage now is fertilizer that has had a chance to fully cure. Place your orders now to assure yourselves of excellently conditioned material. You are doing yourself a favor by taking this fertilizer as soon as possible. Don't be caught short because of a late order."

### Lime Returns Profit of \$19 Acre in Purdue Tests

LAFAYETTE, IND.—Specialists at Purdue University have conducted tests with lime over a period of several years on acid soil experiment fields. Results from livestock-type cropping systems show that each ton of lime produces an average gross profit of \$19 per acre during each rotation.

## Better Selling

Richer Sales Fields for Dealers

### Fertilizer Gives Pasture Big Boost in Texas Test

An irrigated oat pasture on Frio silt loam soil near Crystal City, Texas, was fertilized in October, 1954, with various combinations of nitrogen, phosphoric acid and potash, the Texas Agricultural Experiment Station reports. Half of the nitrogen was applied at that time and the remainder on January 4, 1955. Forage yields were taken by clipping.

Nitrogen, at the rate of 120 pounds per acre, quadrupled the yield of air-dry forage over that of the no fertilizer treatment. A combination of 180 pounds of nitrogen and 60 pounds of phosphoric acid increased the yield five times and was the most profitable fertilizer treatment.

# Douglas

### A DEPENDABLE SOURCE FOR AGRICULTURAL CHEMICALS



Thirty-eight years of serving the industry with top-quality fumigants, agricultural chemicals and insecticides. With this record Douglas Chemical Company can assure you of quality products. In our laboratories and plant, the finest ingredients are blended and formulated into a complete line of products for the elimination and control of pests and insects. In the field, Douglas has become intimately familiar with the problems of farmers, grain producers, cattlemen, elevator operators and millers all over the country. As a result of this first-hand field research, each Douglas product is designed to fill a specific need.

What does this mean to you? It means that Douglas is a source that you can rely on for a complete line of agricultural chemicals and insecticides. Every product in the Douglas line has been tried and proved in use. You know you're right with Douglas!

**DOUGLAS . . . a dependable line of fine agricultural chemicals.**

Tetrafume Grain Fumigant  
Tetrakil Grain Fumigant  
Tetrakote Liquid Grain Protectant  
Tetraspot Spot Fumigant  
Farm Bin Spray  
Special Mill Spray  
Special Emulsion Spray Concentrate  
Cattle Spray, Ready-Mixed  
Cattle Spray, Emulsion Concentrate  
20% Lindane Emulsion Concentrate  
11% BHC Emulsion Concentrate  
2# Aldrin Emulsion Concentrate  
1.5# Dieldrin Emulsion Concentrate  
25% D.D.T. Emulsion Concentrate  
47% Chlordane Emulsion Concentrate  
6# Toxaphene Emulsion Concentrate  
5# Malathion Emulsion Concentrate  
4# 2, 4-D Amine Weed Killer  
2.67# Butyl Ester Weed Killer  
3.34# Isopropyl Ester Weed Killer  
2#, 2, 4-D, 2# 2, 4, 5-T Brush Killer  
Rat-Kill with Warfarin  
Water Soluble Rat & Mouse Killer with Pivalyna

**Douglas**  
CHEMICAL COMPANY  
625 E. 13TH AVE. • PORTLAND 2, OREGON

*if your product is marketed  
through distributors and dealers...*

# Croplife is for YOU!

**AN IMPORTANT EXCLUSIVE** is available to advertisers whose agricultural chemical products are marketed through distributors and dealers. It is Croplife's unique *regional crop-area circulation plan*, carefully developed to fill an urgent need in the industry's marketing and advertising facilities—the need of advertisers to reach the dealers and distributors and farm advisers with an up-to-date story of their products and their consumer promotion plans.

**THIS IS THE PLAN:** In addition to the weekly circulation to manufacturers and formulators, Croplife is distributed on a regional crop-area basis to the dealer-distributor-farm adviser segment of the industry. The merchandising section in each issue of Croplife is specifically edited for dealers in one specific region. This carefully planned editorial formula insures intense reader interest.

More than 11,000 DEALERS, 1,700 custom operators and 1,000 farm advisers receive the issue of Croplife specifically edited for their regional crop-area once each four weeks. The mailing schedule for this group covers consecutively four geographic regions of the United States (see map) with one of four regional dealer issues: The Northeast Dealer Issue, the South Dealer Issue, the Midwest Dealer Issue or the West Dealer Issue. Each week Croplife goes to more than 3,500 dealers, distributors and farm advisers in one of these four regional crop-areas.

**THIS CIRCULATION EXCLUSIVE** is available only through Croplife. The regional crop-area circulation to dealers has been carefully developed to fit the particular needs of the agricultural chemical industry. Many individual products have been developed and approved and are being sold for use on a specific crop; therefore, marketing and promotion plans must be directed specifically to the appropriate crop-area. Croplife's dealer circula-



In addition to its national coverage, Croplife offers a selective regional circulation plan in these crop-areas

tion developed along crop-area lines offers advertisers the *most flexible medium possible*, designed to give "direct-hit" coverage for specific messages without the higher cost of a larger-than-necessary circulation on an inflexible nationwide basis. Advertisers interested in reaching dealers in more than one region can do so easily and economically with a selective advertising schedule.

**HOW TO USE THE PLAN:** Select the regional crop-areas—Northeast, South, Midwest or West—in which you need to reach dealers, distributors and farm advisers with the up-to-date story of your products and your consumer promotion plans. Plan your message to inform and to educate this group. Then, select the appropriate issues of Croplife to carry your advertisements. Croplife's printed circulation statement outlines the four regional crop-areas in detail and gives the issue-by-issue mailing schedule. Ask us for a copy.

## AND SOON—4000 additional selected dealers will be added!

**BEGINNING IN JANUARY** this important circulation exclusive becomes even more valuable to advertisers who are reaching dealers through the pages of Croplife. An additional 4,000 selected dealers handling agricultural chemicals will be receiving the issues of Croplife edited specifically for their crop-areas. One thousand dealers in each regional area have been screened and verified and will be added to Croplife's controlled circulation

plan, bringing the total number of dealers, distributors and farm advisers receiving Croplife to more than 18,000. Each week Croplife will go to more than 4,500 of these interested readers in one of the four regional crop-areas.

**MAKE YOUR PLANS NOW** to capitalize on this unique advertising opportunity, exclusively through the pages of Croplife.

**WRITE-WIRE-PHONE for the full story of your advertising opportunity in**

**Croplife**  
*sales*  
**...for richer fields**

*published by The Miller Publishing Co.*

**NEW YORK**  
114 East 40th Street  
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YOU!

Boosting

YOUR

SALES

THIS AD

and others

like it are

appearing in

leading farm

publications

read by

YOUR

customers

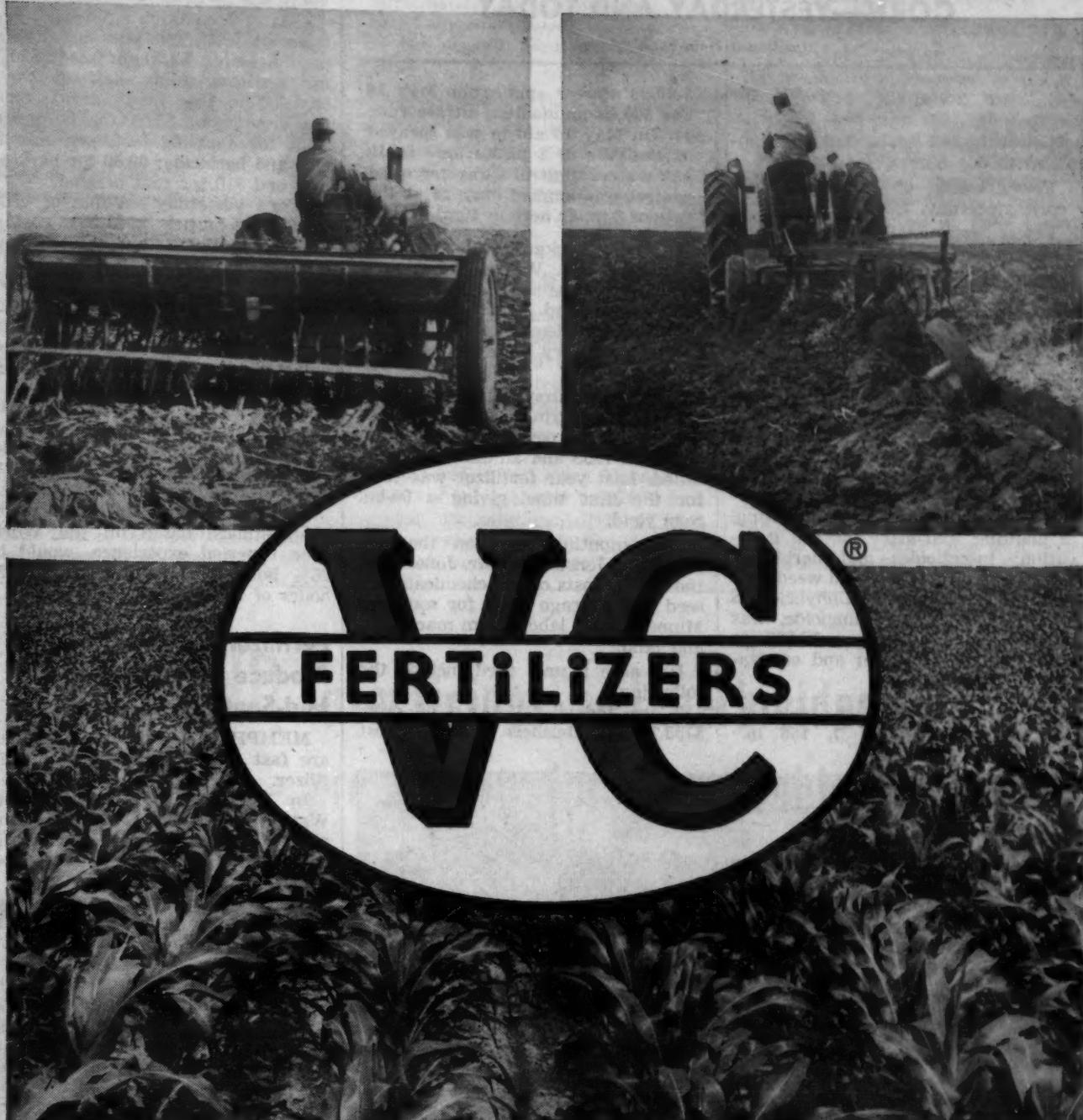
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regional crop-areas.

unique advertising

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IT PAYS TO BE  
A V-C DEALER!

## How to make your fall plowing pay you bigger profits next year

Fall plowing gives you a head start on next year's crop. It saves you labor and valuable time in the spring when you are busy and the soil is often too wet for your tractor. You can greatly increase your profits from fall plowing, by broadcasting 500 to 600 pounds of V-C Fertilizer per acre before you plow. V-C Fertilizer, plowed down now, pays you big profits two ways: 1) It encourages rapid decay of straw, stubble and other crop residues into plantfood-rich organic matter. 2) V-C Fertilizer, plowed deep, stays in the root zone to feed your crops all next summer, even if the weather turns dry. State colleges are recommending fall fertilizer plow-down on adapted soils. Plow-down plenty of V-C Fertilizer now to make profits come up in 1956!

### See Your V-C® Dealer

V-C Fertilizers are made in many different analyses. Your V-C dealer will supply you with the right V-C Fertilizer to fit your plow-down needs. Ask him about top-quality V-C PROLIFIC, the rich, mellow blend of better plant foods fortified with important minor elements lacking in many soils. V-C Fertilizers and V-C Superphosphates are backed by 60 years of experience in serving millions of farms in many states. Your V-C dealer is a good man to know and do business with. *See him today!*

VIRGINIA-CAROLINA CHEMICAL CORPORATION • RICHMOND 8, VIRGINIA

Albany, Ga. • Atlanta, Ga. • Baltimore, Md. • Birmingham, Ala. • Carteret, N.J. • Cincinnati, Ohio • Columbia, S.C.  
Dubuque, Iowa • East St. Louis, Ill. • Fort Wayne, Ind. • Greensboro, N.C. • Hopkinsville, Ky. • Jackson, Miss. • Memphis, Tenn.  
Montgomery, Ala. • Norfolk, Va. • Orlando, Fla. • Richmond, Va. • Savannah, Ga. • Shreveport, La. • Wilmington, N.C.



## CORN—YESTERDAY AND TODAY

(Continued from page 1)

for "corn yesterday" and \$64 for "corn today."

Lower bushel costs, 52¢ bu. compared to 66¢ bu.

Fewer weeds, 60% less than the "corn yesterday."

Fewer barren stalks, only 2% compared to 13%.

Less lodging and fewer broken stalks, 5% compared to 16%.

The "corn yesterday" plot was handled by methods common in the twenties. The land was not fertilized, except for eight tons of manure top dressing; open-pollinated (Minn. No. 13) corn was checked in rows, 12,000 plants per acre; and after planting the corn was harrowed and then cultivated four times.

The "corn today" plot was fertilized three times—before planting, at planting, and after the last cultivation; insecticides and herbicides were applied for insect and weed control; a modern hybrid, Minhybrid 508—treated with a fungicide, was planted on the contour, 18,000 to 20,000 plants per acre; and cultivation was limited.

Fertilizer applications included 400 lb. 5-20-20 May 7, 160 lb.

5-20-20 starter application May 16 and 300 lb. ammonium nitrate June 17. On May 16 aldrin was sprayed at the rate of 2 lb. an acre in 40 gal. water. Dinitrol spray for weed control was applied May 23 at the rate of 3 lb. an acre in 4 gal. water.

In giving background on the demonstration, Mr. Wiebusch explained that about three acres of the Wenzel farm is involved. The field was selected for the demonstration because no lime and very little fertilizer had ever been used.

In 1952, the first year the Wenzels operated the farm, corn on this field averaged 35 bu. per acre. Oats yielded 18 bu. in 1953 and an alfalfa seeding failed. Last year fertilizer was tried for the first time, giving a 60-bu. corn yield.

In computing costs on the two plots, Mr. Jensen and Mr. Jones used the actual costs of the chemicals and seed and average costs for southern Minnesota for labor, farm machinery and land.

Per acre figures used include the following:

"Corn today"—Value of crop, \$153.75 (123 bushels x \$1.25); cost

of production, \$64.33; and return above cost, \$89.42.

Cost of production figures per acre included \$9.18 for plowing, discing, planting, etc.; \$2.50 for seed; \$20.50 for fertilizer (only half of cost charged to this year's crop); \$3.60 for insecticide; \$5.55 for herbicide; \$3.50 for applying fertilizer, insecticide and herbicide; \$9.50 for harvesting; and \$10 for rent of land.

"Corn yesterday"—Value of crop, \$73.75 (59 bushels x \$1.25); cost of production, \$39.13; and return above cost, \$34.62.

Cost of production figures included \$11.18 for plowing, discing, planting, etc.; \$7.75 for seed; \$11.20 for manure (cost of application plus 40% of value of manure); \$6 for harvesting; and \$10 for rent of land.

Mr. Jones and Mr. Jensen also estimated that raising one acre of corn under modern methods would take seven man hours of labor and 5½ hours of tractor time.

Figures for time and labor under old methods, based on the World War I period experience, would be 26½ hours of human labor and 53 hours of horse time.

### Fertilizer Helps to Produce Fat Crops for Mid-South Farmers

MEMPHIS — Mid-South farmers are fast learning the value of fertilizer.

In Dunklin County, Mo., Vance Watson and Glen Cashdollar have proved it takes fertilizer and water to make a high yield of sweet potatoes.

They had 20 acres of sweet potatoes they fertilized according to soil test recommendations and irrigated with a sprinkler system. Their yield was more than 400 bu. to the acre, compared with the average county yield of 125 bu. to the acre.

Clifford Sweat of Ashport, in Lauderdale County, Tenn., has just harvested 35 acres of corn on which he had used 90 lb. nitrogen per acre from anhydrous ammonia for a yield of 133 bu. per acre.

### Sod Cover Best for Orchards, Tests Show

EAST LANSING, MICH.—Tests by Michigan State University horticulturists disprove the long-held belief that clean cultivation is better for orchards than a sod cover. At the Graham Experiment Station, Grand Rapids, the sod mulch cover actually retarded tree growth and fruit production in Bartlett pear orchards for the first 12 years.

But from then on the sod cover plot produced more fruit than did a clean cultivated plot, and had virtually no water loss.

At the end of 25 years the fertilized sod mulch had produced 1,136 more bushels of fruit. And the sodded trees had 80% more fruit measuring above 2½ inches during a 6-year grading test. The horticulturists found about the same results for apple orchards.

### A. Siegel Promoted To New Sales Post

NEW YORK—A. Siegel has been promoted to eastern division sales manager of bags and paper for the Southern Kraft Division of International Paper Co., it has been announced by George Stuhr, Sr., division sales manager.

Mr. Siegel joined International Paper Co. in 1925 at the company's New York offices. Since 1935, he has served as assistant sales manager of the Southern Kraft Division in charge of all paper products.

Hugh B. Vergara has been named to replace Mr. Siegel as assistant sales manager. Mr. Vergara has been with the company since 1935 in different sales positions in the New York office.

## Gloomicides

Marriage: A union between people in which the man pays dues.



Mr. Jones stared in a puzzled at Mr. Clark, to whom he had been introduced. "You look like man I've seen somewhere, Mr. Clark," he said. "Your face seems familiar. I fancy you have a double. A funny thing about it is that I remember formed a strong prejudice against man who looks like you—but sure we never met."

Mr. Clark laughed. "I'm the man he answered, "and I know why I formed the prejudice. I passed a contribution plate for two years the church you attended."



She: "Do you believe that tight clothes stop circulation?"

He: "Certainly not. The tighter woman's clothing, the more she's circulation."



Announcer: A man who talks until you have a headache, then tries to sell something to relieve it.



In Scotland a motorist had a narrow shock when a large farm cart turned without warning, into a side road.

Having avoided a collision by not being short of a miracle, the enraged motorist chased after the cart and shouted to the driver: "You blithering ass; why didn't you put your hand out to show that you were turning in here?"

"Uch, don't be daft," was the reply, "I always go doon this road."



What a terrific din there'd be if you made as much noise when things are right as we do when they go wrong.



The Sunday school class was composed of three-year-olds. The teacher asked:

"Do any of you remember who St. Matthew was?" No answer.

"Well, does anyone remember who St. Mark was?" Still no answer.

"Surely some of you must remember who Peter was?"

The little faces were full of interest, but the room remained quiet. Finally a tiny voice came from the back of the room:

"I think he was a wabbit!"



The army is cool to a highly-vaunted automatic pistol, as it hasn't yet caught up with the western movie six-shooter which fires fifty-seven times.



Taxpayers: Those who don't have to pass a civil service exam to work for the government.



During a major bus strike in a large city, a pretty young thing was desperately trying to get a ride. A young man happened by at the time and seeing the pretty young thing having trouble, inquired, "Why don't you try waving a white hankie?"

The pretty young thing replied, "All I'm trying to do is to get a ride. I don't want to surrender."



A symphony conductor was rehearsing a difficult solo passage for the flute. After going over it many times the conductor rapped for attention. "We can't stay on this any longer—we must go on to the next movement." He turned to the flutist, "You'll keep in touch with us won't you?"



Every hunting season some accidents happen because both the hunter and the gun are loaded.



**CORN YESTERDAY AND TODAY**—The pictures above illustrate the differences between corn grown by yesterday's methods and that grown by today's. They were taken at the Walter and Paul Wenzel farm near Red Wing, Minn., where the "Corn—Yesterday and Today" demonstration was carried out. In the top photo, Paul Wenzel, left, and G. J. Kunau, Goodhue County agent, examine how corn in the yesterday plot was broken down by wind and corn borers. The center picture shows the two root systems, with the system from the "corn today" plot on the right. Below shows two piles of weeds taken from ten square feet of each plot. The small pile on the right (between the cornstalks) came from the "corn today" field.



## WORLD REPORT

By GEORGE E. SWARRECK  
Croplife Canadian and Overseas Editor

The Canadian chemical industry continues to expand at a rapid rate, aided in the main by local money, aided by the invested capital of American concerns. The former is being poured into concerns that have the Canadian agricultural trade many years, while the latter provides the funds to open up new sources of raw material. (See story page 1.)

Canadian Industries (1954), Ltd., expects to begin operations at its new \$9 million anhydrous ammonia plant located at Kingston, Ont., by middle of 1956. This is only one of several Canadian developments in the field.

Electric Reduction Co. of Canada is building a \$5 million plant for the production of sodium chlorate on a site in North Vancouver, B.C., with completion date set for late in 1956 early in 1957.

This firm, well known for its participation in the agricultural chemical trade, was established at Buckingham, Que., in 1898. Although confined at first to the production of phosphorus, the Buckingham plant has been greatly expanded and now produces sodium and potassium sulfate, phosphoric acid, sodium and potassium phosphates. The firm recently completed a plant at Varennes, Que., to add to its productive capacity of phosphorus. Plans, the company says, are almost complete for other multimillion dollar projects in western Canada.

### Change of Name

Canadian Industries (1954), Ltd., which adopted that name last year after the split of holdings between the original company and the Dutch organization, is to revert to the name by which the company was recognized before the division. H. W. Smith, president, says that towards the end of 1956 the use of "54" as part of the name will be dropped and the original title of Canadian Industries, Ltd., readopted.

Mr. Smith, speaking to a meeting of stockholders called to approve the name change, said that sales in the nine months of 1955 have risen over the comparable period a year ago, a result of improved economic conditions.

### aze-Winning Movie

A film depicting the war between man and insects has won first prize in "work and technique" at the recently-held Venice film festival and a first prize at a similar festival at Arnhem, Holland. It is "The Rival World," a production of the Bell Chemical Co.'s film unit.

The film critic of the London Times writes, "The rival world is the world of insects, and the film describes the efforts to destroy, by chemical poison, the noxious tribes of tsetse, mosquito, locust, weevil, and so on. The film is most remarkable for its camera work, particularly of insect life, which swings boldly from the fascinating to the gaudy and back."

But the strongest impression that leaves is one of fear; fear of the strength, statistically, of the insect world and fear that so much of the task of subjugating it remains to be done."

### Phosphate in Alaska

A report on phosphate deposits in southern Alaska has been issued by

the Geological Survey of the U.S. Department of the Interior.

The deposits, which occur at several localities on the Arctic slopes of the northern part of the country, were discovered during the course of geologic mapping in the area. Sampling has revealed that the beds vary in thickness from 2 to 25 inches, with some containing as much as 30% P<sub>2</sub>O<sub>5</sub>, although the over-all phosphatic zone appears to average only about 10% P<sub>2</sub>O<sub>5</sub>.

The lack of transportation facilities appears to be one of the fac-

tors precluding economic working immediately. The deposits are located several hundred miles north of the nearest road and rail systems.

Aircraft provide the only practical means of transportation to the region. The nearest settlements with permanent airfield facilities are 80 to 100 miles away although suitable lakes for the landing of amphibious planes are nearby.

### Monsanto in U.K.

Monsanto Chemicals, Ltd., British subsidiary of the Monsanto Chemical Co. plans to spend more than \$1.4 million on the construction of a plant to manufacture phthalic anhydride at its Newport factory. The plant is expected to be in operation by the end of 1957 and it will bring Monsanto's output of this material to 15,000 tons a year. Phthalic anhydride is used for several purposes in the chemical business, including insect repellents.

### New Feed Crop Grown In Rio Grande Valley

EL PASO, TEXAS—A new crop has made its appearance in the Rio Grande Valley. It is sart, a tall, salt-tolerant feed crop that is being used for silage. On an 11-acre patch near Clint, Texas, the owners, Howard and Don Surrant, say they will get 30 tons of silage per acre.

According to the El Paso County agricultural agent, sart was developed at the U.S. Department of Agriculture Sugar Plant Station at Meridian, Miss. The seed was originally brought from the Province of Sudan in Central Africa a few years ago.

On the Surrant farm the new plants grew 12 feet high and became very dense in the rows. The owners think it will make good silage for their cattle, and say farmers in the valley have expressed much interest. Another thing in its favor is that it is very salt tolerant. Since cotton is not suited for the saltier soils, any feed crop that will grow well under irrigation will find favor in this area.

## DIAMOND insecticides and herbicides are known for dependable potency



Diamond's research and development center in Painesville, Ohio

We make  
sure of it here



So you can count on peak performance here



Write for literature on any of our products, and feel free to consult our technical staff when you have special problems. Your inquiries are welcome. DIAMOND ALKALI COMPANY, 300 Union Commerce Building, Cleveland 14, Ohio.



**Diamond  
Chemicals**

#### DIAMOND AGRICULTURAL CHEMICALS

- DDT
- BHC
- LINDANE
- MITICIDE K-101 (Ovex)
- Wettable powders, emulsifiable and oil solutions; and dust concentrates based on our technical grade chemicals
- Seed Disinfectant
- 2,4-D Weed Killers
- 2,4,5-T Brush Killers
- Grain Fumigants

and many other chemicals that help farmers, gardeners, cattlemen and orchardists.

THOUSAND TONS

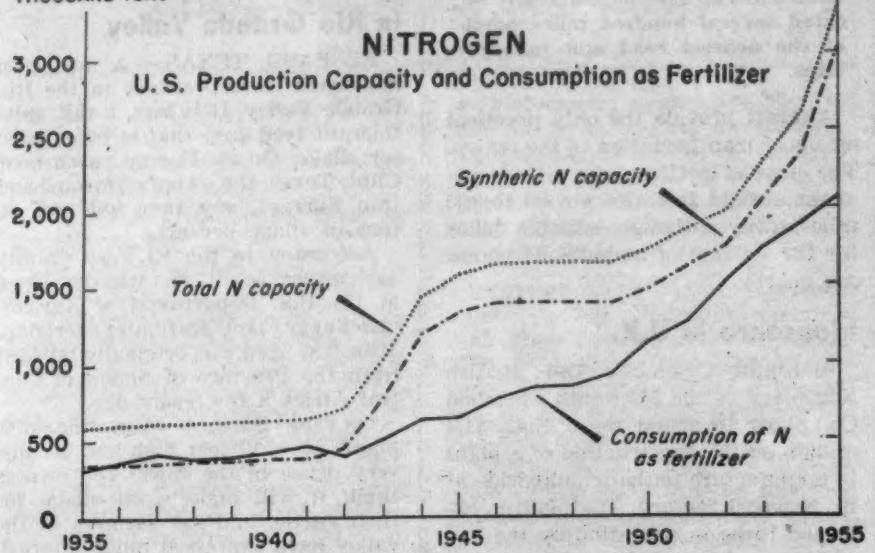


Table 1—1954-55 Fertilizer Nitrogen Supply

Trade Delivery Basis<sup>1</sup> in Tons of 2,000 lb. Nitrogen Content

Item	Ammonium:Ammonium 2/	Nitrate:Sulfate & 3/	Sulfate: Urea 3/	Other: Solids 3/	Natural: Organics 3/	Compound solutions For mixing Ammonia 4/	Direct Application Ammonia 4/	Ammonia 4/	Direct Application Ammonia 4/	Totals
U. S. Deliveries										
Synthetic	408,000	181,000	38,000	90,000	—	453,000	35,000	170,000	414,000	1,789,000
By-product	—	5/176,000	—	—	—	—	—	2,000	—	178,000
Natural organics	—	—	—	—	30,000	—	—	—	—	30,000
Total	408,000	357,000	38,000	90,000	30,000	453,000	35,000	172,000	414,300	1,997,300
Exports 6/	11,000	90,000	4,000	12,000	1,000	30,000	—	7,000	—	155,000
Deliveries minus exports	397,000	267,000	34,000	78,000	29,000	423,000	35,000	165,000	414,300	1,842,300
Imports 6/	133,000	57,000	34,000	174,000	7,000	—	—	3,000	—	108,000
Net supply	530,000	324,000	68,000	252,000	36,000	423,000	35,000	168,000	414,300	2,250,300

1/ Based upon special reports from synthetic ammonia producers and other sources; Bureau of Mines' Monthly Coke Reports, and Bureau of the Census' Facts for Industry and import and export reports.

2/ Includes mixtures of ammonium nitrate and limestone.

3/ Includes ammonium phosphates, sodium nitrate, calcium nitrate, cyanamid, and nitrates.

4/ Includes aqua ammonia.

5/ Includes nitrogen content of ammonium phosphate made from by-product ammonia.

6/ Includes estimated nitrogen content of imported and exported mixed fertilizers and ammoniated superphosphate.

Table 2—Estimated 1955-56 Fertilizer Nitrogen Supply<sup>1</sup>

In Tons of 2,000 lb. Nitrogen Content

Item	Ammonium:Ammonium 2/	Nitrate:Sulfate & 3/	Sulfate: Urea 3/	Other: Solids 3/	Natural: Organics 3/	Compound solutions For mixing Ammonia 4/	Direct Application Ammonia 4/	Ammonia 4/	Direct Application Ammonia 4/	Totals
U. S. Production										
Synthetic	420,000	220,000	50,000	100,000	—	470,000	50,000	180,000	460,000	1,950,000
By-product	—	6/185,000	—	—	—	—	—	2,000	—	187,000
Natural organics	—	—	—	—	30,000	—	—	—	—	30,000
Total	420,000	405,000	50,000	100,000	30,000	470,000	50,000	182,000	460,000	2,187,000
Exports 7/	15,000	110,000	5,000	20,000	1,000	40,000	—	7,000	—	198,000
Supply from domestic sources	405,000	295,000	45,000	80,000	29,000	430,000	50,000	175,000	460,000	1,969,000
Imports 7/	120,000	50,000	30,000	170,000	6,000	—	—	5,000	—	381,000
Net supply	525,000	345,000	75,000	250,000	35,000	430,000	50,000	180,000	460,000	2,350,000

1/ Based on present rates of production, imports and exports and trends in the trade.

2/ Includes mixtures with limestone.

3/ Ammonium phosphates, sodium nitrate, calcium nitrate, cyanamid and nitrates.

4/ Includes ammonia-ammonium nitrate, ammonium nitrate and ammonia-urea solutions in water.

5/ Includes aqua ammonia.

6/ Includes by-product ammonium phosphate.

7/ Includes estimated nitrogen content of imported and exported mixed fertilizers and ammoniated superphosphate.

Table 3—U.S. Nitrogen Balance Sheet

In Tons of 2,000 lb. Nitrogen Content

Item	Year ended					
	Dec. 30, 1950	Dec. 30, 1951	Dec. 30, 1952	Dec. 30, 1953	June 30, 1954	June 30, 1955
Production:						
Synthetic 1/	1,288,663	1,453,711	1,688,069	1,862,847	2,074,882	2,481,436
By-product 2/	192,099	207,313	184,286	216,298	202,111	201,012
Natural organic 3/	38,000	37,000	36,000	35,000	35,000	30,000
Total	1,518,562	1,698,024	1,908,355	2,134,145	2,312,023	2,712,448
Conversion loss (5% of synthetic production)	64,423	72,686	84,403	94,142	103,744	124,072
Deduction for increase in stocks at producing plants during the season 4/	—	6,278	16,319	43,274	13,802	55,170
Exports (industrial and fertilizer) and re-exports	245,382	79,461	69,022	44,478	87,000	196,000
Domestic current supply apparently consumed	1,208,757	1,539,599	1,738,611	1,952,251	2,107,477	2,337,206
Addition for decrease in stocks at producing plants during the season 4/	1,157	—	—	—	—	—
Imports (industrial and fertilizer)	276,697	357,110	471,142	501,151	438,000	419,000
Total apparent consumption	1,609,611	1,896,709	2,209,753	2,453,402	2,545,677	2,756,205
Consumption as fertilizer	1,126,000	1,265,900	1,505,000	1,709,000	1,847,416	2,000,000
Apparent consumption for all other uses 5/	363,611	630,809	704,753	744,402	698,061	756,206

1/ Computed from anhydrous ammonia production reported by U. S. Bureau of the Census' Facts for Industry.

2/ Computed from ammonium sulfate and aqua ammonia production reported by U. S. Bureau of Mines.

3/ Estimated quantity available for fertilizer.

4/ Stocks of anhydrous ammonia, synthetic and by-product ammonium sulfate, by-product aqua ammonia, nitric acid and ammonium nitrate. (Partly from U. S. Bureau of the Census' Facts for Industry and Inorganic Chemicals and partly from unpublished data.)

5/ This figure is merely the difference between the two numbers above it. Although of the correct order of magnitude, it is less accurate than the other data because stock-buildup in the hands of industrial users, fertilizer mixers and distributors is not evaluated.

## 2.5% Increase in Supply of Fertilizer Nutrients Seen in USDA Situation Report

WASHINGTON—The U.S. Department of Agriculture recently estimated that supplies of the three principal fertilizer nutrients in 1955-56 will exceed the 1954-55 supply by about 2.5%. (See page 1 of the Oct. 10 issue of *Croplife*.)

The estimate, which appears in the department's annual fertilizer situation report, is based on existing rates of production and trends in usage and foreign trade, rather than on capacity to produce fertilizer.

The accompanying tables are reproduced from USDA fertilizer situation report.

Details of the 1954-55 deliveries and estimated 1955-56 supply of

nitrogen by type and class shown in Tables 1 and 2.

Four companies sold urea for a cultural use in substantial amounts during the past season, and therefore the nitrogen content is embodied separately in the tables for the time, USDA reports.

Losses in the net supply of nitrogen for agriculture occur in distribution and handling, the ammoniation of superphosphate, sales for small-scale industrial uses and the consumption of ammonia in the manufacture of sulfuric acid in fertilizer plants, USDA points out. These come out of the shipments from primary producers to the fertilizer trade. Notably these losses amount to 2 to

Details of the nitrogen production capacity of the country, regions, for the years 1954 through 1957 and consumption figures for the years ended June 30, 1953 and 1954 are given in table 8. Proprietary plants with a combined capacity of 220,000 tons of nitrogen have been left out of the 1957 total because of some doubt that they will be built, USDA says.

Estimates of Canadian nitrogen production capacity are included in table 8 due to the fact that a large part of the Canadian production in the past has been used in the U.S. and because capacity is being expanded in Canada also. If announced plans are carried out Canadian capacity will increase from around 300,000 tons on July 1, 1954, to about 500,000 tons of nitrogen in 1957.

Prior to 1942 consumption of nitrogen as fertilizer in the U.S. did not exceed a half-million tons. As shown by the graph on this page, usage has increased rapidly since then.

Although every synthetic ammonia plant in the U.S. was operating near capacity in 1951, with the exception of Morgantown Ordnance Works, demand for nitrogen was met because of decreased exports and increased imports, USDA says. The manner in which the import-export balance suddenly changed from 1951 to 1951 is shown in table 3.

This trend continued until 1952 but has now swung in the other direction. In 1952 about 95% of total capacity was fully utilized to produce nitrogenous materials. In 1954-55 fiscal year the rate of production had dropped to about 80% of capacity.

If demand for nitrogen should continue to grow at the rate it has in recent years, agriculture would require about 3,000,000 tons in 1960.

It appears now that agricultural consumption in 1954-55 approximated 2 million tons of nitrogen. Should requirements continue to increase 10% per year, as they did for a number of years, ample production capacity will be available in North America by July 1, 1960, to take care of this and all other normal needs of this continent for the next few years, USDA says.

Details of 1954-55 deliveries and 1955-56 estimated supply of P<sub>2</sub>O<sub>5</sub> by type of class and material are shown in Tables 4 and 5. Quantities of available P<sub>2</sub>O<sub>5</sub> produced are always substantially more than the amounts delivered to farmers, USDA says.

An average of about 2% of available P<sub>2</sub>O<sub>5</sub> is reverted to an available form in liming superphosphate for sale in bags. It has been estimated that an average of around 4% of the available P<sub>2</sub>O<sub>5</sub> in run-of-mill goods used in making mixed fertilizers is also lost, mostly due to ammoniation, according to USDA.

Details of the 1954-55 deliveries and the 1955-56 forecast for phosphate are shown in Tables 6 and 7.

Table 4

Table 4—1954-55 Phosphate Supply

In Tons of 2,000 lb. Available P <sub>2</sub> O <sub>5</sub>					
	Normal* super-phosphate	Enriched super-phosphate	Concentrated super-phosphate	All others†	Total
Item— production	1,572,000	41,000	619,000	179,000	2,411,000
Imports	80,000	....	59,000	30,000	169,000
Supply from U.S. sources	1,492,000	41,000	560,000	149,000	2,242,000
Imports	2,000	....	1,000	67,000	70,000
Total supply	1,494,000	41,000	561,000	216,000	2,312,000

Includes wet-mixed base goods.

Includes ammonium phosphates, basic slag, fused rock phosphate, liquid phosphoric acid and natural organics, and 2% of colloidal phosphate and 3% of rock phosphate applied directly to soil.

Includes the available P<sub>2</sub>O<sub>5</sub> content of mixed fertilizers.

Table 5—Estimated 1955-56 Phosphate Supply

In Tons of 2,000 lb. Available P <sub>2</sub> O <sub>5</sub>					
	Normal* super-phosphate	Enriched super-phosphate	Concentrated super-phosphate	All others†	Total
Item— production	1,550,000	45,000	650,000	200,000	2,445,000
Imports	100,000	....	70,000	40,000	210,000
Supply from U.S. sources	1,450,000	45,000	580,000	160,000	2,235,000
Imports	2,000	....	1,000	62,000	65,000
Total supply	1,452,000	45,000	581,000	222,000	2,300,000

Includes wet-mixed base goods.

Includes ammonium phosphate, basic slag, fused rock phosphate, liquid phosphoric acid, dicalcium phosphate, high-grade residue, natural organics and other sources of available P<sub>2</sub>O<sub>5</sub>.Includes the P<sub>2</sub>O<sub>5</sub> content of mixed fertilizers and ammoniated superphosphate.

Table 6—1954-55 Potash Supply for Fertilizer

In Tons of 2,000 lb. of Potassium Oxide					
	Potassium chloride*	Potassium sulfate and sulfate of potash-magnesia*	Manure salts*	All other materials†	Total
Item— deliveries from U.S. sources	1,687,000	107,000	1,000	26,000	1,821,000
Imports	86,000	10,000	....	1,000	97,000
Deliveries minus exports	1,601,000	97,000	1,000	25,000	1,724,000
Imports	104,000	30,000	....	7,000	141,000
Total supply for agriculture	1,705,000	127,000	1,000	32,000	1,865,000

\*Deliveries as reported by producers.

Includes potash content of imported potassium nitrate, of natural organics, such as cassava stems, and of miscellaneous fertilizers, such as cement-flue dust. Some small-scale uses of muriate (chloride) are included here since they are not included in the muriate published elsewhere.

Includes the potash content of mixed fertilizers.

Table 7—Estimated 1955-56 Potash Supply\*

In Tons of 2,000 lb. of Potassium Oxide					
	Potassium chloride*	Potassium sulfate and sulfate of potash-magnesia*	Manure salts*	All other materials†	Total
Item— domestic production	1,780,000	140,000	1,000	26,000	1,947,000
Imports	130,000	15,000	....	1,000	146,000
Supply from U.S. sources	1,650,000	125,000	1,000	25,000	1,801,000
Imports	100,000	30,000	....	8,000	138,000
Total supply	1,750,000	155,000	1,000	33,000	1,939,000

\*Based on consumption trends and prospective demand rather than on capacity of the industry to produce.

Includes potassium nitrate, potassium carbonate, cement-flue dust, nitrate of soda and natural organics.

Includes potash content of mixed fertilizers.

Table 8—Nitrogen Production Capacity, Consumption

1,000 Tons, 2,000 lb. Each, of Nitrogen Content

Region	Production capacity 1/ as of July 1				Fertilizer consumption 2/ year ended June 30	
	1954	1955	1956	1957	1953	1954
Western 3/	791	898	1,062	1,097	492	518
West North Central 4/	380	472	652	653	239	261
West North Central 5/	188	301	359	452	180	266
West South Central 6/	250	372	408	500	256	263
West South Central 7/	789	949	949	950	151	182
Western 8/	210	297	485	680	266	299
Territories 9/	1	1	1	35	53	58
Total United States	2,609	3,290	3,918	4,367	1,637	1,847
Eastern Canada 10/	139	162	204	290	29	30
Eastern Canada 11/	167	177	190	219	15	12
<b>TOTAL</b>	<b>2,915</b>	<b>3,629</b>	<b>4,310</b>	<b>4,876</b>	<b>1,681</b>	<b>1,889</b>

/Estimated total of synthetic, chemical by-product and natural organic nitrogen.

J. S. figures from data compiled by the Soil and Water Conservation Research Branch, Department of Agriculture; those for Canada from Dominion Bureau of Statistics.

New England, Middle Atlantic and South Atlantic States.

Ohio to Wisconsin inclusive.

North Dakota and Minnesota to Kansas and Missouri inclusive.

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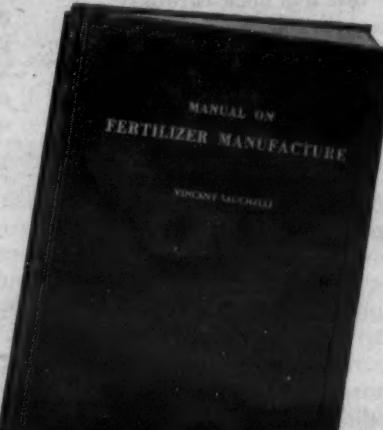
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## Misusing Soil Tests

Along with the increasing emphasis on the value of soil-testing to determine plant food needs, have come a handful of opportunists who find the soil test a handy gimmick for peddling sub-par fertilizer products.

Scattered reports of such activity have been heard from time to time, and nearly always the situation involves the sale of "cheap" fertilizer offered by unknown salesmen who insist upon the buyer signing up for soil tests and then applying the "plant food" in accordance with their own private recommendations.

Such fertilizers are usually quoted at a cost substantially below the local market or even below wholesale prices, and there seem always to be enough people who buy on price alone, to keep these fringe operators going.

The University of Illinois, in a warning to the farmers of that state, terms this type of business a "racket" which misuses the soil test. The University advises farmers to be cautious when approached by a salesman selling fertilizer much cheaper than the going price. It warns growers not to sign any soil-testing service or fertilizer sales contract without first consulting the local farm adviser to determine whether or not the person offering the cheap material and soil tests is from a well-known or accredited soil-testing laboratory.

"As a general rule," the University observes, "soil testing laboratories and fertilizer companies don't require you to sign service or purchase contracts. A soil test is worthless unless the test has been carefully calibrated in terms of crop response by carefully conducted field experiments. It is also worthless if the person making the lime or fertilizer recommendation does not correctly interpret the test values."

The statement reminds that soil testing laboratories in Illinois are accredited only by the Agricultural Stabilization and Conservation (ASC) offices, and to remain on the accredited list, a soil testing laboratory must submit monthly samples for checking by the university. If the soil test values submitted for the sample do not continue to check with those secured at the university, the laboratory can be removed from the accredited list by the state ASC office.

"Soil testing methods have been developed by state universities and promoted by the Extension Service, Soil Conservation Service, bankers and numerous other reputable organizations and persons interested in the welfare of agriculture," the bulletin reports.

Like all worthwhile things, it is possible for soil testing to be twisted somewhat to serve the ends of unscrupulous people seeking a fast buck. We are sorry to see this happen, for soil testing by men well-trained in analytical chemistry and perhaps agronomy, is a very effective tool in adding to the efficiency of fertilizer recommendations. It would be a setback to the industry if soil testing should fall into disrepute because of an extremely small percentage of sharp operations on the fringe.

## Supports and Economies

Ezra Taft Benson, Secretary of Agriculture, has his finger at the pulse of American agriculture possibly more tightly than any other individual in the country. His frequent talks before important agricultural groups, though sometimes tinged with political considerations, are well worth weighing thoughtfully.

Just the other day, Mr. Benson was the featured speaker at New Brunswick, N.J. in connection with the 75th anniversary

celebration of the New Jersey Agricultural Experiment Station there. His observations on the subject of supports and agricultural economics hit on some basic matters. Here are a few excerpts from that speech:

"We are all seriously concerned about the level of farm income and the prices of many important commodities. During the past five years, many farmers have felt the squeeze of falling prices and high costs.

"This is our number one economic problem in agriculture. All forces in agriculture—producers, processors, handlers, and government researchers, extension workers, program planners, and administrators—must unite in a common effort to maintain a prosperous farm economy. We must do this not only in farmer's interest, but in the interest of the whole country, because the economic welfare of agriculture affects the entire economy.

"... A great issue is at stake in the discussions now going on. Stated in simple terms the issue boils down to this:

"Shall the primary reliance of American farmers be on what government subsidy, regulation, and control can do for them—or on what programs of research, education, marketing, regulatory services, and the like, can do to help farmers do a better job—to help them to help themselves? Shall we emphasize price and dollars to the expense of markets and efficiency?

"We recognize the need for adequate and effective price supports because the development of modern agriculture has placed the farmer in a vulnerable economic position. Programs of price support and storage are needed to help assure stability of farm income and prices in the interest of all our people.

"But isn't it also true that we need to recognize that there are some things price supports are incapable of doing? They cannot by themselves improve the efficiency of farm methods. They cannot create a market for a commodity if the support is pricing the commodity out of the market. They cannot provide adequate income where production itself has to be cut down too far in order to keep prices near the support level.

"The goals of fair prices and income in the market place cannot be achieved by price supports alone, nor indeed by government programs alone."

## Seeing Ourselves

Since this is the season for agricultural people to be visiting the farms and ranches of other countries, it is always interesting to note what foreigners visiting the United States have to say about us.

Waldemar Rodrigues, a 24-year-old farmer from Brazil who is in the United States on a rural youth exchange scholarship, declares that although American farmers are the best "in the whole world" and their farms are the cleanest and best worked, he thinks that they "work too hard, and carry too much responsibility."

After observing the activities on a number of Pennsylvania farms, he added further "they make too much money. For what? They get up early, work all day, talk and sleep farming and at the end of the year go through their checkbook. For what? So, the year is good, they start all over again."

It might be of interest for Mr. Rodrigues to hear comments of any American farmers who have the occasion to visit in Brazil. It is probably a good thing to have an exchange of viewpoints. This young Brazilian will probably have a very odd observation to take home with him. "The American farmers seem to want to make money."



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at \$5 for one year, \$9 for two years (\$8 a year outside the U.S. and possessions). Single copy price, 25¢.

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19-21—International Conference Use of Antibiotics in Agriculture, Jefferson Memorial Auditorium, U.S. Department of Agriculture, Washington, D.C.

26-28—Mississippi Fertilizer Conference, Buena Vista Hotel, Biloxi, Miss.

27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Morris, Executive Secretary, 228 N. Salle St., Chicago, Ill.

31—Nebraska Fertilizer Institute, Inc., First Annual Convention, Cornhusker Hotel, Lincoln, Howard W. Elm, Executive Secretary, 917 Rust Bldg., Lincoln 8, Neb.

31-Nov. 3—United Kingdom National Crop Protection Conference, Eastbourne, England.

Nov. 14—Ohio Regional Lime & Fertilizer Conferences, at Wilmington Nov. 1, Findlay Nov. 2, McConnellsburg Nov. 3 and Cadiz Nov. 4.

Nov. 2-3—Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon L. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 2-5—Third annual Mid-Atlantic Farm and Home Show, Convention Hall, Atlantic City, N.J.; William J. Haffert, Jr., Sea Isle City, N.J., executive vice president.

Nov. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass. B. H. Davis, Department of Plant Pathology, Rutgers University, New Brunswick, N.J., secretary.

Nov. 4—Fertilizer Section, South Carolina Annual Accident-Prevention Conference, Hotel Francis Marion, Charleston, S.C.; Anton L. Foster, International Minerals & Chemical Corp., General Chairman.

Nov. 6-8—California Fertilizer Assn., Thirty-second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary and Manager, 475 Hunt-

ington Drive, San Marino, Cal.

Nov. 8-10—17th Annual New York State Insecticide, Fungicide and Application Equipment Conferences; Bibbins Hall, G.L.F. Exchange, Ithaca, N.Y.; O. E. Palm, Cornell University, Ithaca.

Nov. 9-10—Oregon Weed Conference, Senator Hotel, Salem, Rex Warren, Oregon State College, Conference Secretary.

Nov. 16—Pesticide Dealers Conference, Rutgers University, New Brunswick.

Nov. 16-17—Ohio Pesticide Institute's Ninth Annual School and Conference, Ft. Hayes Hotel, Columbus, Ohio. J. D. Wilson, Ohio Agricultural Experiment Station, Wooster, Secretary.

Nov. 18—Arkansas Fertilizer School, Little Rock.

Nov. 22—Manufacturing Chemists' Assn., Semi-Annual Meeting and Winter Conference, Statler Hotel, New York.

Nov. 29-30—Land Use Forum, Kansas State College, Manhattan, Kansas, Dr. R. V. Olson, Kansas State College, Chairman, Arrangements Committee.

Nov. 29-30—Oklahoma Plant Food Educational Society, Inc., Memorial Union Bldg., Oklahoma A&M College, Stillwater.

Nov. 29-Dec. 2—Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

Dec. 2—South Dakota Fertilizer Dealers Short Course, South Dakota State College, College Station.

Dec. 5—Soils & Fertilizer Short Course, Institute of Agriculture, University of Minnesota, St. Paul Campus.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

Dec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.

Dec. 8-9—Michigan Fertilizer and Lime Conference, Michigan State College, East Lansing.

Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.

Dec. 28-30—American Phytopathological Society, Atlanta, Ga.; Glenn S. Pound, University of Wisconsin, Madison, Wis., Secretary.

Dec. 29—Symposium on Health Hazards of Chemicals, before the Pharmacy Section at Annual Meeting of American Association for the Advancement of Science, Atlanta.

1956

Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York; W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 10-11—Eighth Annual North Carolina Pesticide School, North Carolina State College, Raleigh.

Jan. 15-17—New Mexico Grain & Feed Dealers Assn., Annual Convention, Hilton Hotel, Albuquerque, with Special Portion for Fertilizer and Farm Chemical Dealers; H. B. Hening, Albuquerque, Secretary.

Jan. 16-18—Southern Weed Conference, Ninth Annual Meeting, Hotel Jung, New Orleans; Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Jan. 26-29—Agricultural Aircraft

Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Feb. 6-8—Cotton States Branch, Entomological Society of America, Biltmore Hotel, Atlanta, Ga. W. G. Eden, Alabama Polytechnic Institute, Auburn, Ala., secretary-treasurer.

Feb. 7-9—National Garden Supply Trade Show, Kingsbridge Armory, New York City.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17—Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

March 14-18—National Agricultural Chemicals Assn., Spring Meeting, Hollywood Beach Hotel, Hollywood, Fla., Lea S. Hitchner, NAC Executive Secretary, 1145 19th St. N.W., Washington 6, D.C.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

June 28-30—Seventh Regional Fertilizer Conference of the Pacific Northwest, Chinook Hotel, Yakima, Wash.

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